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THE ANTHROPOGRAPHY OF NORTH AMERICA*

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(Map [Figs. I and II] facing p. 166.)

North America, if we include the West Indies and the Arctic islands, is notably more populous in the south than in the north; in general, we may say its population thins from south to north (Fig. I, facing p. 166). Nearly two-thirds of the continent is scantily populated, especially to the north and in the west center. The larger and more continuous portions of this area are a true wilderness. Throughout the whole of it, the population is less than 2½ inhabitants to the square mile. That is what is meant here by "scanty" population. And much of it has very much less than that density, for the Canadian province of Franklin, comprising the islands north of the continent, contains practically no inhabitants. Its area is as great as that of the United Kingdom, Germany and France combined, half a million square miles. Ungava, nearly as large, has but 5,000 people, and Alaska, with more than 500,000 square miles, has but 62,000 inhabitants—about a tenth of an inhabitant to a square mile. The new Canadian territories Saskatchewan and Alberta had barely one to the square mile even in 1906, after a "rush" from the States. The table shows how

* Read at the Eighth Annual Meeting of the Association of American Geographers in Washington, Dec. 1911.

the whole area is occupied by the various grades of population defined on Figure 1.

	SCANTY	THIN	MODERATE	DENSE	VERY DENSE	TOTALS
I—Thousands of square miles:						
Alaska	591	..	..	..	..	591
Canada and Newfoundland	3485	250	45	..	..	3780
United States	1008	930	1022	43	48	3051
Mexico	123	422	200	22	..	767
Central America	44	96	37	15	..	192
West Indies	..	10	78	10	2	100
Totals	5251	1708	1382	90	50	8481
II—Percentages of each country's area:						
Alaska	100	..	..	..	..	..
Canada and Newfoundland	92	7	1	..	.	..
United States	33.5	30	33	1.5	2	.
Mexico	16	55	26	3	..	..
Central America	23	50	19	8	..	..
West Indies	..	10	78	10	2	..
Totals	62	20	16	1	0.5	

There are two reasons why the population is so scanty over nearly two-thirds of the continent: in the far north, cold, further south, drought. Between the fiftieth and sixtieth parallels the two causes coexist, interlacing. Cold, indeed, might be said to cause aridity, for it limits the quantity of water vapor that can be present and may be said to dry up the water that it turns to ice. The correspondence of the isohyetal lines with the isanthropic lines of the population map is very striking. The area with less than twenty inches of rain (Fig. 2) nearly coincides with the uninhabited region, the only considerable disagreement being along the Pacific coast of Alaska and Canada, where rains are heavy but people few. Not cold nor drought keeps men from the land here, but the extreme ruggedness of the surface. The most nearly comparable part of Europe, Norway, has but eighteen inhabitants to the square mile after more than a thousand years of effort to take possession of the land, and the country accounts ninety-six per cent. of its territory unavailable for man. This strip of Pacific coast, however, is a small part of the whole uninhabited area. The two maps show that for North America a rainfall of less than twenty inches in the year is effective aridity. Thus in the United States and Canada most of the people are found east of the 100th meridian, like the rainfall, and there are patches and strips of people everywhere in the West where patches and strips of rainfall greater than

twenty inches are found. In southern Mexico and Central America also, where the rain falls all across the land from east to west, there are people well distributed all across.

Equally striking is the way this unpeopled area narrows toward the south. Canada and Alaska have four million square miles of it, the United States nearly a million, Mexico a hundred thousand

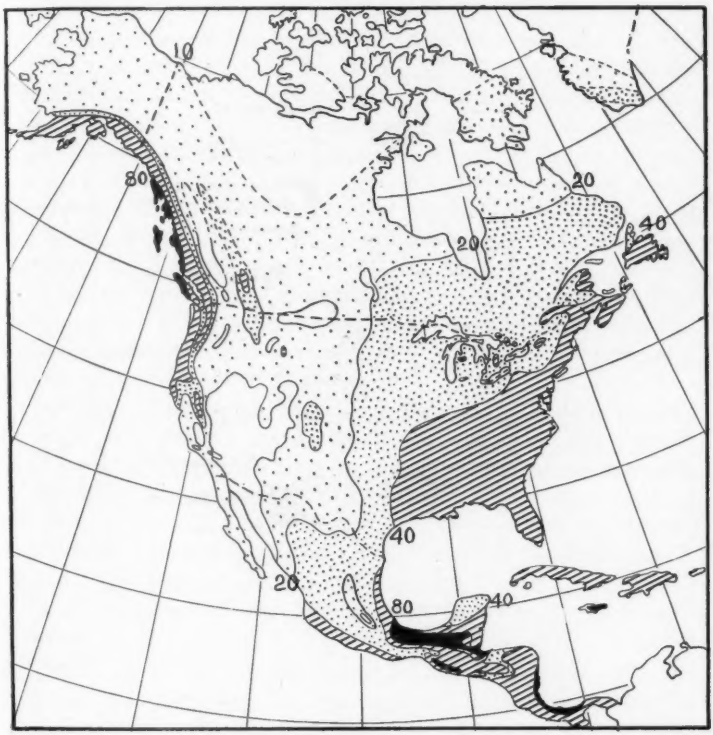


FIG. 2.—Annual Rainfall of North America in Inches.

square miles and Central America only forty-four thousand. Putting it another way: about 93 per cent. of Canada and Alaska together have scanty population, 33 per cent. of the United States, 16 per cent. of Mexico, and 23 per cent. of Central America.

If we look now at the grade of population I have called dense (between 125 and 250 inhabitants to the square mile) we find it is as persistently an increasing proportion southward as the scanty areas

were diminishing ones, though the actual number of square miles diminishes because the continent narrows so rapidly to the south. Canada's percentage of dense population is 0, that of the United States 1½, of Mexico 3, of Central America 8, and of the West Indies 10. Population denser than 250 to the mile occurs only in the United States and West Indies. The West Indies display the greatest population densities of all America (Fig. 3).

FIG. 3—The Number of People to the Square Mile in the Lesser Antilles. Figures from R. T. Hill's "Cuba and Porto Rico, etc.," 1898, p. 18.

Only one island on this map of the Lesser Antilles has so few as ten people to the square mile, though the scale of the map is much larger than the others and all islands are shown that are large enough to show distinct shape on this scale. This only "thinly" populated island is Barbuda, which has never been open to settlement, but has always been maintained as a hunting preserve of the Coddrington family.* Then come Margarita, off the coast of South America, with 85, and Dominica with 90, though the latter has considerable areas of forests as primitive as when Columbus named the island; then Trinidad, Tobago and St. Lucia, with between 100 and 200. But

* R. T. Hill: Cuba and Porto Rico With the Other Islands of the West Indies, New York (Century Co.), 1898, p. 321.

Grenada and the Grenadines, St. Vincent, Martinique, Guadeloupe, Montserrat, Antigua, Nevis, St. Kitts and St. Croix all have between 200 and 500 to the mile, like Porto Rico. Finally, St. Thomas and Barbados boast of 1,400 and 1,100 inhabitants to the square mile—by far the densest populations of the New World, for in both cases it is mainly a rural population.

This great population of the West Indies is almost wholly African, as that of Central America and Mexico is largely Indian and African. We of the north are all what the Latin American calls *Creoles, i. e.* descended of Europeans but born in the New World. The Indian and African multiply with the increasing exuberance of nature as the equator is approached. The dense and very-dense populations of the Boston-Philadelphia and Pittsburg-Cleveland regions are due to a greater complexity of causes, among which is prominent a high development of manufacturing in the neighborhood of agricultural abundance, abundance of raw materials and good communication internally and with the outer world—the Great Lakes on the one hand and the Atlantic on the other. The eastern region has had the advantage of a longer period of settlement, the western of enormous stores of wood, coal and iron in the midst of a broad expanse of excellent farming land.

The great mass of inhabited North America is divided between the population grades marked "thin" and "moderate" (from 2½ to 26 to the square mile, and from 26 to 125)—1,700,000 square miles of the thin and 1,400,000 of the moderate, respectively 20 and 16 per cent. of the area of the continent. The apportionment of this area among the people of European race north of the thirtieth parallel and the Indians south of it is quite different. The United States and Canada between them have about the same area of moderate and thin population, 1,100,000 and 1,200,000 square miles respectively, and the thin population is for the most part a very long band of frontier margin about the moderate population. The marginal character is all the plainer when we recall that the overwhelming majority of the American people live in that eastern area of moderate population. While the areas involved are not very unequal in size, the number of people in the moderately settled part is six or seven times as great as that in the thin settlements.

South of the thirtieth parallel, however, the thin population occupies almost twice as great an area as the moderate, 500,000 square miles against 300,000. The West Indies are small in total area, and in Mexico the moderate population is only a little nucleus, for the

most part in the temperate heights. In Central America a still smaller portion is found on the drier western heights, for the distribution of people there is in distinct strips: scant on the east, then thin, moderate and dense toward the west. The rains are heavier on the east.

In no case does North America appear to show that advantage comes of rainfall greater than forty inches in the year, as far as population data might show it. A rainfall between twenty and forty inches, on the other hand, has great power to render a region populous.

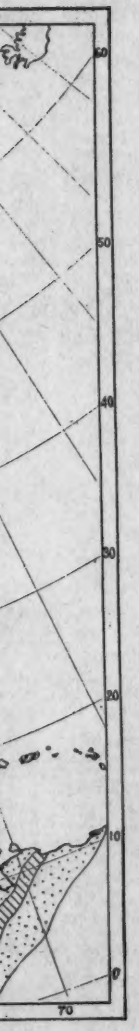
As for relief, it is plain that in Canada and the United States the leveler lands are of next importance to the proper rainfall. The Adirondacks and the Appalachian ridges have thin population with moderate prevailing on the less hilly land on either hand. The Western plains are arid. Only in the mountain valleys is there sufficient rain, so there the population avoids the plain. Of the Alaskan coast it was said above that its ruggedness is prohibitive. In Mexico, the high sun of those latitudes makes the plains unfavorably hot and the rough plateau attractive for its cool, temperate climate.

But our mountain ranges signify more to Americans through the rainfall that they control than directly. Europe has considerable rainfall in its western half, and the contrast in the arrangement of Europe's mountains to ours is an admirable illustration of the influence our western mountains have had on the distribution of people. Were they less high or arranged in east-and-west ranges we should have to chart more rain and more people west of the 100th meridian. Nor would the East have to atone for this western abundance by a loss of rain. The eastern ocean provides, being one of very few elements in the arrangement of our continent in which it is happier than Europe.

All of this is surely geographic: human response to environment. The continent is new, but one and another part has been tried for homes till men know fairly where they thrive and where not. *In the main* the best parts of North America are among the best settled parts, toward the east. There are frontier parts that have much growth ahead, but the "thin" borderland toward the 100th meridian is not growing as fast as the thicker settled East. It is Iowa in this western borderland that is the only one of the United States to lose population in the last decade, though it still has but forty people to the square mile.

The following table sets out the population grades used in the

FIG. 1. Scale 1 : 58,000,000.



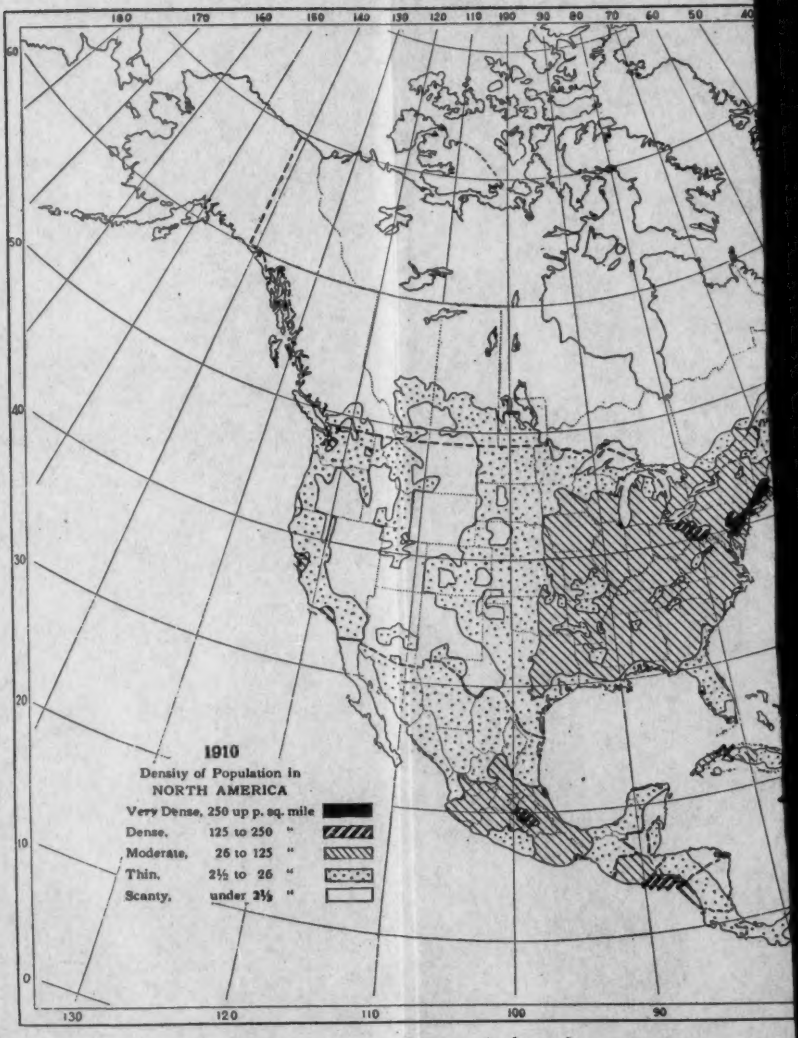

1910
Density of Population in
NORTH AMERICA
Very Dense, 250 up p. sq. mile
Dense, 125 to 250 "
Moderate, 26 to 125 "
Thin, 2½ to 26 "
Scanty, under 2½ "

FIG. 11. Scale 1:58,000,000.

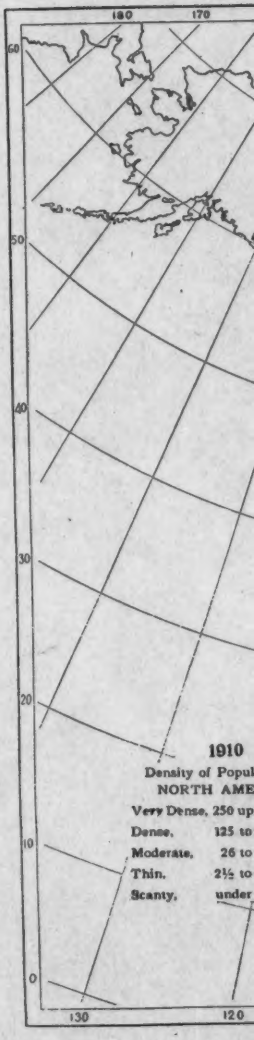


FIG. 1. Scale 1:58,000,000.

XUM

FIG. 11. Scale 1:58,000,000.

previous table and on Figure 1 together with their metric equivalents (only approximately).

DESIGNATION	NUMBER OF PEOPLE	
	PER SQUARE MILE	PER SQUARE KILOMETER
1 Scanty.....	less than 2½	less than 1
2 Thin	2½ to 26	1 to 10
3 Moderate	26 to 125	10 to 50
4 Dense	125 to 250	50 to 100
5 Very dense.....	more than 250	100 and over
6 Urban	more than 10,000	4,000 and over

The grades have been taken from Berghaus's Physikalischer Atlas (Pl. 62), except 6, which is original. Diercke (Schulatlas, Braunschweig, George Westermann, 1910) uses the same values for his maps of Asia and North America. His world map combines grades 2 and 3. A number of European atlases use rather similar gradings in world or continent maps. Their accordance is shown on Figure 4 by subdividing a line that represents a maximum density

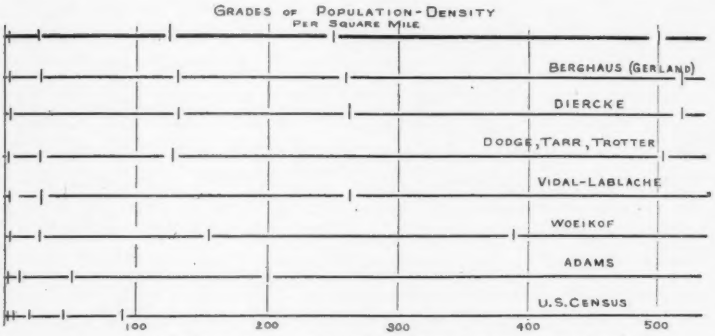


FIG. 4—Grades of Population Density Used by Various Authors. The subdivisions used in this paper are shown on the first line.

of 500 people to the square mile. One square mile is taken equal to 2.59 square kilometers. On the same diagram are also placed the gradings of the world population maps from several American textbooks. Probably none of them claims to be an original map.

The last line of the diagram represents the gradings used by the United States Census for its beautiful population diagrams. It is strikingly different from the other gradings in that the divisions cling to the left hand end of the line. The reason for its limitation to small densities is, first, that the cities or towns of 8,000 or more

people have been deducted from the population before computing the density, and, second, that American population densities are really small. As far as is known, such a deduction of the cities is usual for *country* population diagrams, necessarily on a somewhat larger scale than those of a continent, but has not been made for any of the continental ones, nor has it been for the present map. The United States Census publications, however, must always remain the principal dependence for population studies for North America. Especial interest for us attaches to the beautiful series of maps of distribution of population in the United States for every census from 1790 to 1900, all made for population grades of 2, 6, 18, 45 and 90 people to the square mile, after deducting the dwellers in cities of 8,000 or more. Such maps were not made at the time of publication of the early Census reports, but first in 1870. The Census of that year was the ninth. The Director was General Francis A. Walker, professor of political economy in the Sheffield Scientific School, Yale College. The first map, probably issued in 1872 or 1873, had population grades 5, 15, 40, 75, and 125, which were never used afterwards. In 1874 was published the first Statistical Atlas of the United States, F. A. Walker, Editor. It seems that in 1872 several professors in the Sheffield Scientific School memorialized the Secretary of the Interior desiring the use of graphic illustrations in publishing the results of the Ninth Census. The Secretary referred the matter to Congress and the Atlas was the result. This contained the now familiar series of maps of density of population at each census with the grades that have continued in use since that time: 2, 6, 18, 45 and 90.*

The omission of cities of 8,000 people and the resulting small subdivisions of population grades of the official maps appear to be a mistake, followed by succeeding issues of the Census, in part as tradition, in part because the reconstruction of the series of maps from the beginning is a considerable task. The scale of the maps is too small to distinguish rural from city population, as is the intention in this elimination of the "cities."

On large-scale maps this distinction may be easily and clearly made, indeed the large-scale map may be said to make it so automatically. Singular facility for anthropographic studies is offered by those regions of the United States where the land is divided into square mile sections. It happened in the part of Michigan where

* In the Tenth Census distribution of population was also shown by states, on a series of maps of much larger scale, with cities of 4,000 deducted and intermediate grades of density: 2, 6, 11, 18, 29, 45, 65 and 90. This has never been repeated and exists for that census only.

the writer lives that the United States Geological Survey was making the local map at about the same time that the State was making the enumeration for its Census of 1904. The map, as is well known, indicates not only the cities, towns and villages, but also all the houses in the country. Figure 5 is a diagram from this map of Ypsilanti township, containing thirty-six square miles, six on an edge. Apart from the city of Ypsilanti, shown in the northern part of the diagram as a dark patch, there were 1,050 inhabitants. The houses in the country number 258, so there must have been four people to a house. With this datum the number of inhabitants of each square mile section has been estimated from the number of houses. These numbers have been written in on each section of the diagram. In addition the map is shaded like Figure 1, for grades of 2½, 26, 125, 250 people to a square mile; also there are two little patches of black for "city" density of 10,000 to the mile within the legal city of Ypsilanti. The 31.8 square miles of the "township," outside the city, have an average density of population of 32 persons to the mile. A glance at Figure 5 will show that twenty of the sections have values pretty near that. Such a map shows admirably the different way in which the city or village population and the farm population occupy the ground. It is hardly necessary to point out that a considerable number of the farm owners live in the villages, having rented the farm for cash, or "on the halves"; furthermore, that a great part of the work of tilling the soil and marketing the crop is done directly or indirectly by the city people, especially in the making and repairing of houses, barns, furnishings, tools and clothing. To get the same crop out of the ground without this help of the townsfolk more people would have to live on the farms to attend to this part of the process. If deductions of all villages and city people were made and the density of population then computed and put on a map, it would only be the

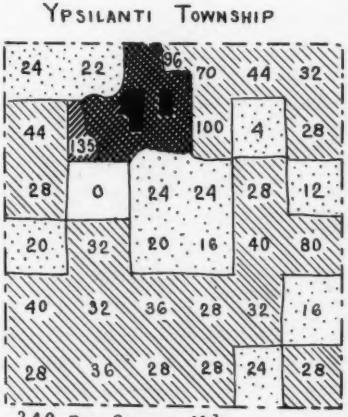


FIG. 5—Density of Population, in 1904, of Ypsilanti Township, Washtenaw County, Michigan.

density of people actually living on farms, not the density of the population. However, even this is very far from the result attained by the Census elimination of cities, for Ypsilanti has less than 8,000 inhabitants. As only cities of 8,000 or over are "eliminated," its population has never been deducted. The Census practice would be to add in city and township and call the whole 8637 "rural" inhabitants. Dividing this number by the thirty-six square miles of the area we get a density of population of 240 people to the square mile; as no section of the township away from the city has anything like so great a density, it must be regarded as a failure in the attempt to show real rural conditions. But this is not fair to the Census, for the unit used in the Census work is not the township but the county.

Figure 6 extends the area studied to about equal a Michigan county.* The shading is still given for each separate section, but the numbers in the middle of each township are the average densities obtained in the manner described above and take no account, therefore, of any city, town or village, however small. That is, the actual houses in the country have been made the base of an estimate of the country population. If the shading, too, had been done by townships, all would have the "moderate" grading (26 to 125), except the single township in the northwest corner. Outside of the two cities Ann Arbor and Ypsilanti and the five villages, the population of the whole averages 31 to the square mile. Inspection section by section shows this to be a very fair value of the rural density throughout the area.

It is a fair test of the Census procedure, as we have about a county represented, to see what we get on omitting Ann Arbor, the only place of over 8,000 inhabitants. The figures as given by the State Census are: Ann Arbor city, 14,599; Ypsilanti city, 7,587, and the villages, Dexter, 796; Milan, 750, and Saline, 733, with 19,295 in houses in the country, a total of 43,760. Apart from Ann Arbor city, there are 29,161, which divided by 540, the area in square miles, gives an average of 54 persons to the mile for the "rural" population. It is, of course, much too great. It is neither the rural nor the total density of population, but a purely arbitrary quantity.

So evident is it that much "urban" population lives in cities of less than 8,000 people, that the discussions of rural population in the reports of the Twelfth Census used 4,000 as a critical value for

* It contains parts of three counties and includes all the complete townships shown on the Ann Arbor quadrangle of the topographic map by the U. S. Geological Survey, on which all of the facts may be verified.

"cities" that should be omitted, and the present, or Thirteenth, is using 2,500. But the maps that the Census issued, showing density of population, have continued to be based on sums from which the population of cities of 8,000 or over only has been deducted. If we

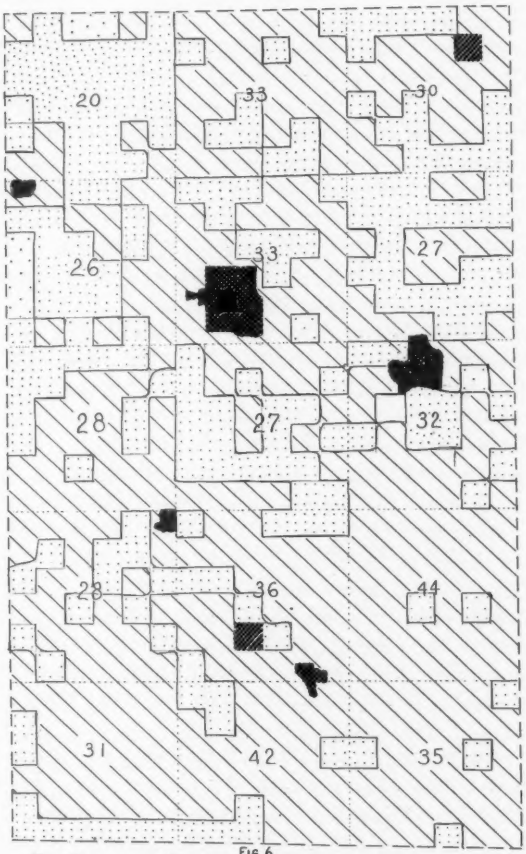


FIG. 6
THE COMPLETE TOWNSHIPS, ANN ARBOR FOLIO, U.S.G.S.
AVERAGE DENSITY, 81; RURAL, 31; WITHOUT ANN ARBOR, 54.

were to use the present Census number, 2,500, as fixing "urban" population for the Michigan region of Figure 6, it would take out Ypsilanti City as well as Ann Arbor and give a population density of 40, *which is still too large*. To learn the real rural population all villages as well as cities must be eliminated. If population could

be mapped on the scale of Figures 5 and 6, we should perceive the actual facts at a glance.

In preparing the present map of North American anthropography, Figure 1, the aim has been to show the distribution of the total population—people of all sorts of occupations—as it exists. It is frankly recognized that details within a county are too small to show, that the conception of the average density of population of a county, which is made the base of the work, is an abstract one; that though the people are not evenly distributed over the counties, city and country are closely related economically, so that the number of people in one immediately affects those who live in the other. Finally, they are the real people who live in that county, and the study of the distribution of these county units of population leads to a clear view of some useful concepts for geographical study.*

Besides the desire to show in one diagram all the facts of distribution of people—a desire that, we have pointed out, fails and must fail on any small-scale diagram—there appears to be a feeling that there is something in city life essentially remote from the occupation and cultivation of the soil; a feeling that city folks are not real dwellers on the soil.

Yet the cities are an integral part of the occupation of the land by a people; they are completely dependent on the people who live in the fields and woods and mountains. The country dweller can absolutely dispense with the city. Whatever the city dwellers do for him they could do if they, too, lived on the farm, perhaps not so cheaply nor so agreeably to themselves, but effectively. That was the arrangement in colonial days when cities were few, and isolated settlements do something like it to-day. The farmer can exist without the city and maintain a considerable degree of culture. What he draws from it are in good part luxuries and superfluities rather than necessities. The city grows out of the wealth of the country. Professor Penck has put it that every city dweller may have but a tiny home space, but a much greater, a sufficient, "sustenance" space must exist for him somewhere in the country. Bergen, in Norway, has almost as fine a harbor as New York; why has it less than a hundred thousand people? Simply because there is not sustenance space back of it for more. The cities draw their whole life from the country. "Each city has its growth limited by the size of its agricultural province. Large cities cannot be very near each other." Villages are sure to occur at short distances and small cities at

* For pertinent observations on the treatment of cities see O. Schlüter: Siedelungen im nordöstlichen Thüringen, Berlin (Costenoble), 1903, p. 78 *et seq.*

greater ones, all in interrelation and drawing their life from the soil of the country. In them are centered certain operations from the actual work of the nation that could be done on the farm but is more conveniently done at occasional points, with materials gathered from wide spaces.

I have published elsewhere some considerations of the essence of a city. General Walker, at the outset of his work, raised the question: What is a city? His solution was that a city must have eight or more thousand people in it. Later censuses have reduced the number to 4,000 and now to 2,500, with some special consideration for New England. It is probable that further reductions will be made later. It appears from the study referred to (The Anthropography of Some Great Cities, this *Bull.*, Vol. 41, 1909, pp. 537-566), that a better distinction would include reference to area as well as to number of people; it then becomes a grade of density of population. If ten thousand to the square mile fairly corresponds to the idea of city, perhaps rural population passes into that of village or town at some figure like 400 or 500 to the square mile or even less. The General Laws of Michigan, for instance, provide a consideration for the incorporation of villages that is very much to the point. "Any part of a township or townships containing an area of not less than one square mile, and not less than 300 persons, may be incorporated as a village, etc." Any city may therefore contain "city" and "village" part; with us they commonly do; Ann Arbor and Ypsilanti have been shown so on the diagrams. The so-called suburban parts of the great American cities are of this village sort.

The foregoing discussion should prepare the way for the idea that the density of total population may itself indicate the extent to which the people live in cities or on farms and indeed what general sorts of occupations they are engaged in.

Although he had reduced his data by an arbitrary deduction of the cities of 8,000, General Walker in the Statistical Atlas of 1874 formulated some of these indications for grades of population density. These were always too small, however, because of this reduction. The following is from his preface: The area with less than two people to the square mile was left blank on the map. The line bounding that area was called the "line of population," or the "frontier line." "The petty population that lies beyond is made up of the solitary ranchman, the trapper and the fisherman, the small mining party and the lumbering camps at the sources of streams that find their way into more populous regions." Also at page 3 are named the grades of density: I, 2 to 6; II, 6 to 18; III,

18 to 45; IV, 45 to 90, and V, above 90. "Of these groups, as I will call them, the first three generally indicate a predominatingly agricultural population. Speaking broadly, agriculture in the United States is not carried to such a point as to afford employment and support to a population in excess of 45 to a square mile, consequently the fourth and fifth groups never appear with us except as trade and manufactures arise, and the classes rendering personal and professional services are multiplied. Of the agricultural groups the first represents a very sparse population, such as in our western country might be sustained by grazing industry, without any cultivation of the soil, and accordingly we find this group at the present time mainly along the frontier (Minnesota to Texas). The poorest tillage regions also sink into this group, and hence we find not inconsiderable portions of some of the older states in this class. . . . . The second group, 6 to 18 inhabitants to the square mile, indicates almost universally the existence of defined farms or plantations, and the systematic cultivation of the ground, but this in an early stage of settlement upon more or less rugged soil. Thus we find this group still large in many of the western and southwestern states and in the mountainous regions of the Atlantic slope. The third group, 18 to 45 to the square mile, almost universally indicates a highly successful agriculture. Here and there the presence of petty mechanical industries raises a difficult farming or planting region into this group. But in general, where manufactures exist at all, they induce a population of 45 or more to the square mile. We should therefore expect to find, as we do find, No. III the predominating group in Alabama, Georgia, Delaware, Illinois, Kentucky, Indiana, Michigan, Mississippi, Missouri, North Carolina, South Carolina, Tennessee and Virginia. Ohio and the New England states Maine, New Hampshire and Vermont also have very large parts in this degree of settlement. The fourth group almost universally indicates the existence of commercial and manufacturing industry and the multiplication of personal and professional services. New York, New Jersey, Pennsylvania, Ohio and Indiana are the states in which the group is found in excess of any other. The fifth group represents a very advanced condition of industry. . . . . This degree of settlement is only reached where manufacturing and trading villages are numerous."

Apart from the depression of the population densities limiting the grades that results from deducting the cities, it will be seen that General Walker's considerations apply to the United States alone. For the purposes of comparative geography it is highly desirable

to use grades of world-wide application, selected from a geographic point of view.

Such grading is suggested by considerations proposed by Wiechel in a study of population density.* Wiechel divides population densities into 16 "steps" or grades, culminating with 518,000 people to the square mile, in the heart of some very great cities (like New York). He assigns characteristic occupations to many of his grades and notes countries or parts of countries that may serve to illustrate these occupational densities. They have the distinct advantage over General Walker's examples of ranging over the whole earth.† The grades above these are all occupied more and more with manufacturing.

TABLE II.

WIECHEL'S TABLE OF OCCUPATIONAL AND REGIONAL DENSITIES.

PEOPLE PER SQUARE MILE.

0–8, hunting and fishing	2–5, Siberian provinces
	2–13, Australian states
8–39, grazing (after Meitzen)	15, forests of Saxony
	26, Asiatic Turkey
26–65, first agriculture	52, Caucasia
	65, Montenegro
65–130, extensive farming	78–181, farming provinces of Russia
	91, Mecklenburg-Strelitz
	109, Jutland
	114, Korea
130–194, intensive farming	140, farm regions of Saxony; Pennsylvania
194–259, first manufactures	210, Bavaria
	212, China proper
259–389, mixed farms and manufactures	269, German Empire
	344, Massachusetts
	394, Saxon village communities
389–518, manufactures predominating	409, Province of Westphalia

From this table I select a density grade of 2½ to 26 (hunting, fishing, grazing, lumbering) and designate it that of a "thin" population, with a separation of the first two occupations from the second two at 8, if desired. From 26 to 250 I call agricultural densities: extensive, as in America (from 26 to 125); intensive, as in Europe (from 125 to 250). As examples of the actual farm and town arrangement of the people under the extensive farming density (26 to 125), take the following: thirty to the square mile on the farms

* Eine Volksdichteschichtenkarte von Sachsen in neuer Entwurfsart. *Zeitschrift des Königl. Sächs. Statist. Bureaus*, Dresden, 1904, p. 164.

† Wiechel gives people per square kilometer, which I turn into people per square mile by multiplying by 2.59.

would mean seven farms with a little more than an average of four people to a farm. Seven farms to a square mile would be about ninety acres to a farm, and there might be left for the villages and cities any number of persons for each square mile up to 95. Or fifty to the square mile on the farms would mean fifty acre farms and anywhere up to 75 persons for each square mile for villages and cities. These limits will include a good deal of the farming

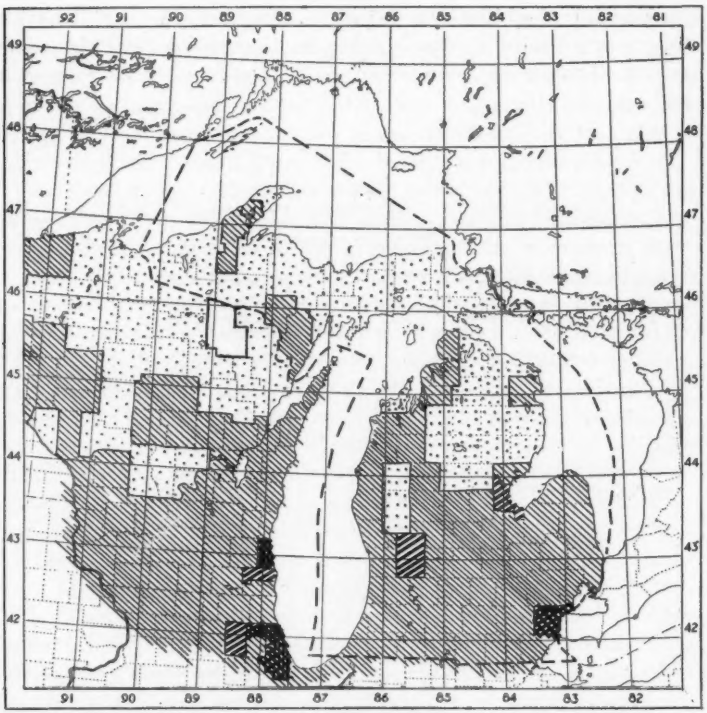


FIG. 7—Density of Population, in 1900, of Wisconsin, Michigan and Part of Illinois. Grades as on Fig. 1.

country of the Middle West; frequent villages, and occasional cities, the big ones far apart. A quite other set of values belongs to the market-garden lands about our biggest cities and the garden-like farm lands of Europe, with their much smaller farms, their much greater yield to the acre, and their more numerous and larger towns.

Application of these interpretations and illustration of the manner in which the map of distribution of people (Fig. 1) has been

prepared may be found on Figure 7, a portion of the Great Lakes country on a fairly large scale, as used in preparing for the map of the continent. There was written in on each county the average density of population from the reports of the Twelfth Census, and the areas as given in Rand, McNally's Atlas. The counties were then shaded in as on Figure 1, one Wisconsin county "scanty," northern Wisconsin and Michigan "thin," and the southern part of both "moderate," while the "dense" and "very dense" counties locate for us Chicago, Detroit, Milwaukee, Grand Rapids and Bay City. Wisconsin's scanty county, Forest, we may expect was a wilderness in 1900. We should look for lumbering in northern Wisconsin and

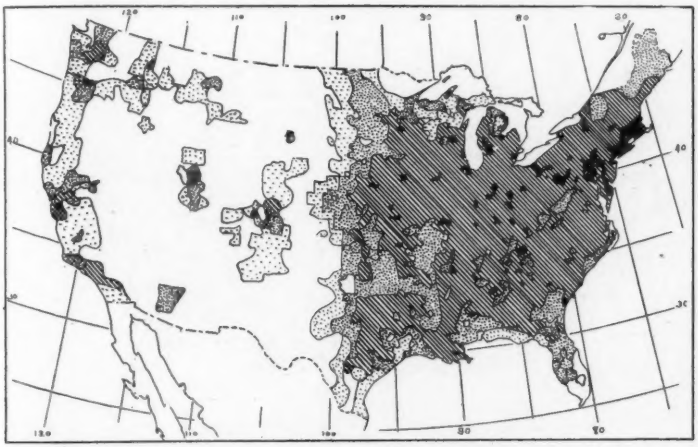


FIG. 8—Density of Population of the United States in 1900 by Berghaus Grades (cities not deducted). Blank, less than 2½ to the square mile; dots, 2½ to 8 and 8 to 26; lines, 26 to 125 and 125 to 250; black, 250 or over.

Michigan and farming, extensive farming, in the southern parts of both states. No attempt has been made to indicate the "city" grade, as the map was to be too small to show it in its finished form.

Figure 8 shows the result for the whole United States, differing from the state maps by the smoothing of all outlines of grades and omitting single counties that differed from their neighbors. The two shades of dotting distinguish the hunting and fishing lands from those of grazing and lumbering. On Figure 1 these were combined. The sites of all our great cities are to be made out from the high density of their counties. The lined area well indicates the chief agricultural area of the country.

Figure 9 enables us to compare the effect of the Census map for the same date. Having eliminated the cities, the home of manufactures, its main failure is to show how manufactures are developed in the northeast corner of the country, as Figure 1 well showed.

For Mexico and Central America the Statesman's Yearbook supplied densities of population by states. For Canada the population maps of the superb Atlas of Canada of 1906 served as a base for a somewhat impressionistic sketch, which was yet held by it to a fair relation to the facts. The grades used in the Atlas are 4, 10, 20, 30, 50, and 75 people to the mile. Cities do not seem to have been deducted in estimating density, but are represented by various sized

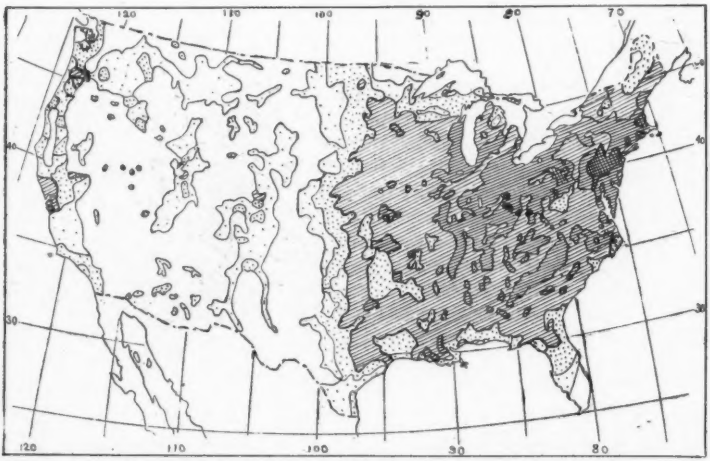


FIG. 9—Density of Population of the United States in 1900 by U. S. Census Grades (cities of 8,000 or over deducted). Blank, less than 2 to the square mile dots, 2 to 6 and 6 to 18; lines, 18 to 45 and 45 to 90; crossed lines, 90 or over.

circles of solid color. The Canadian map by itself has a singular fringing aspect, for inhabited Canada is mainly the immediate valley of the St. Lawrence and some expansions across the frontier of American population groups.

The resulting map of North American anthropography shows very clearly where is the wilderness of the continent, and as clearly where the urban life. Further, it will suggest likely places to look for lumbering or grazing, now one, now the other. Farming regions, too, are well shown. For cities a separate map is demanded by the smallness of the scale. In New England, for instance, they are closely crowded. The Census maps, so often referred to, carry the

legend "Cities over 8,000 inhabitants in solid color in circles proportionate to population," but are not able to fulfill the promise. In Massachusetts, for instance, they omit Fall River (with 100,000 inhabitants) as well as the quite sizable Brockton, Lynn and Haverhill. A separate map (Fig. 10) has been prepared for all cities of a hundred thousand or over, distinguished by suggestive symbols. Actually, all cities of over 90,000 have been included for the year 1900. For the others, the values to the nearest hundred thousand

FIG. 10.

were used, 230,000 counting for 200,000, 470,000 for 500,000. The great cities have the numbers of the anthropographic city (for definition see this *Bull.*, Vol. 41, 1909, p. 544, footnote) assigned them. To indicate smaller cities clearly a larger scale would be desirable.

The work as now completed will serve as a consistent term of comparison with the map that can soon be completed for North America in 1910.

* * * * * *

Since the above pages were written, the details of the census enumerations of 1910 and 1911 have been coming to hand. Figure 11 (facing p. 166) is the diagram for North America in 1910. With many changes in detail, the anthropography of the continent has not changed. So powerful are the geographic influences governing the life of the continent that 22,000,000 new inhabitants—a fifth of the total of 1900—are here without materially altering the arrangement. The greatest visible change is, of course, in the "thin" grade of population density, which now occupies nearly 300,000 square miles more territory in the United States as well as a smaller additional area in Canada. The mass of the increase, however, has been in the more populous East. We have imperfect information as yet outside of the United States, but it has 92 of the 127 million inhabitants of the continent, and 11 of the 16 million inhabitants added in the decade live in places of more than 2,500 people, only five million in smaller places. It is probable that some such distribution of people in North America as now prevails will last for a long time.

THE CATTLE INDUSTRY OF THE LLANOS

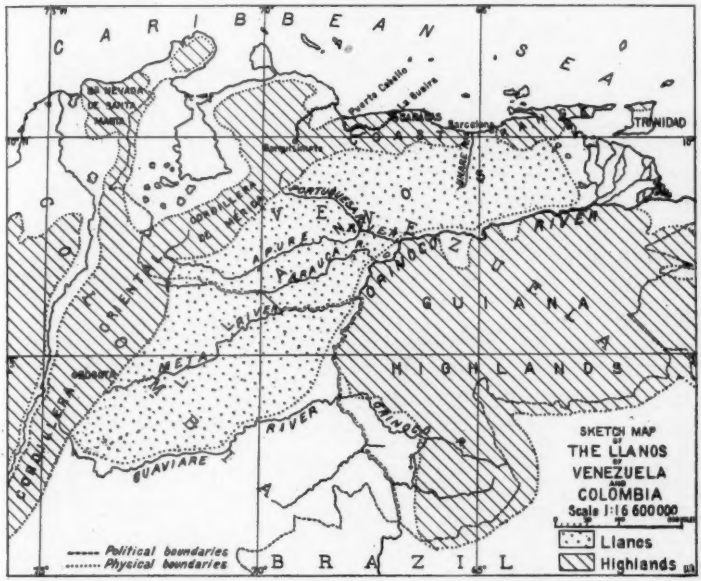
By WALTER LEFFERTS

In these days of excessively high prices of meat, when beef on the hoof sells for ten, eleven and even twelve cents a pound, and men unwillingly become more vegetarian, it is desirable that we should inquire as to foreign possibilities of supplying our demand. Only in a rather primitive plains region, it is obvious, can a supply of cheap meat be procured. South America possesses three such regions. The campos of Brazil are as yet undeveloped in grazing. The pampas of Argentina send practically all of their exported meat to Great Britain, and it is doubtful whether English control of this trade can be shaken. The llanos of northern South America, however, form a grazing region so comparatively unknown, yet so near to us, that it is worth consideration.

Physical Description. East and south of that north-eastern range of the Andes whose extension forms the Caribbean Coast Range of Venezuela, lie the llanos or plains. They cover about one-third of Venezuela's present territory—an area of some 120,000 square miles—and extend over a hundred miles beyond Colombia's northern

border. On the southeast they are limited by the highlands along whose base flows the Orinoco, and on the east they merge into the swampy delta of the same stream.

This large expanse of almost level land, about 700 miles in length and of a width varying from 200 miles in the north to 300 miles in the south, was once the bed of a sea or lake, bordered by high shores. Sands, clays and gravels, the waste of these shores, form its superficial soils. Little rock is exposed. Many parts of the llanos are



not more than 300 feet above sea-level, and even the highest portions are probably below 1,000 feet.

Apparently as flat in most places as a billiard-table, these wide plains stretch to the horizon "like an ocean covered with seaweed," to use Humboldt's classic comparison.* On the higher elevations, the gravelly "mesas," shoals in the ancient sea, which extend in a line through the center of the northern portion, there is insufficient moisture to support tree growth. Where, however, pools of water have stood in hollows, and all along the banks of streams, isolated trees and little groves appear.

* Humboldt: Journey to the Equinoctial Regions of South America, London, 1852, Vol. 2, p. 84.

Most of the surface is grassy, the thickness of the covering varying according to moisture. The growth on the mesas is sparse at all times, but a great part of the llanos is covered with much really excellent pasturage of Para and guinea grass, which are recommended for forage in our own Southern states. Other large regions support growth much like the grasses of our Plains, not especially tender, but nutritious.*

Climate. The llanos are, roughly, between the parallels of 5 degrees and 10 degrees north latitude. During our winter the belt of greatest heat lies to the south of them, and the northeast trade-wind sweeps unobstructed over their surface, bringing from the sea to their extreme eastern portion a fair amount of rain. As the wind progresses, however, it soon becomes heated and absorbs moisture instead of depositing it, until it causes great discomfort to the central and western section of the Venezuelan llanos. The east wind is forced up, however, as it reaches the Andes, becomes cooled, and gives a good rain supply to the foothills, from which descend many streams to water the plains. While this wind blows, generally from November to March, it is the dry season of the greater portion of the plains.

The early part of the dry season is very pleasant. The grass is sweet and fresh, the temperature moderate, the water-supply good, the trees green, the air extraordinarily clear. As the season advances, however, the smaller streams dry up, the grass turns brown, leaves drop from the trees, and intense heat radiates from the unshaded ground, yet toward the close of the season, the heavy night dews cause an abundant growth of fresh pasturage. The llaneros often assist this process by firing the plains to remove old growth.

When the zone of greatest heat has passed north of the equator, the northeast trade-wind ceases to blow. There is now but little wind. Obstructed by the forests and highlands south of the Orinoco, the southeast trade-wind reaches the plains but fitfully. What breeze there is brings moisture from the south, however. The sky grows cloudy. At last it rains many hours of the day. The humidity and comparative stillness make the heat very trying, but the rain keeps down insect pests, which are torturing to man and beast during much of the dry season. The rivers swell tremendously, and large areas are flooded. The region between the Portuguesa, Apure and Arauca Rivers is almost completely under water

* Ramon Paez: Wild Scenes in South America, London, 1863, pp. 135, 136.

for several months, and it is not until the Meta River is passed that floodland is left behind.

State of the Cattle Industry. The llanos at present are adapted to nothing so well as grazing. They present the same condition of free range land which our Western Plains possessed in the early history of their settlement. Their area in Venezuela and Colombia is at least as large as the states of Colorado and Pennsylvania combined, or 150,000 square miles. The amount of rain which falls upon these plains is far greater than that which our Western Plains receive, and the comparative barrenness is less.

At present the llanos support, beside cattle, many herds of horses and mules, but no sheep. No estimate of the number of cattle in Colombia is at hand. The number on the plains of Venezuela is estimated at less than two million; but this can be a mere estimate in a country where no census of the population has been taken since 1891 and where all official figures of interior matters are subject to grave doubt. Humboldt more than a hundred years ago (about 1802) gave an estimate of 1,200,000. In view of the conditions which have existed since Humboldt's time, it may well be doubted whether the herds have increased at all.

The universal testimony of modern travelers is to the effect that the scarcity of cattle in favorable regions of the Venezuelan llanos is surprising. Dr. Bingham (1907) noted this in the lands lying immediately east of the Andes;* Dr. Mozans (1909) found the same condition along the Orinoco.† Dr. Sievers (1903) states that since the time of Humboldt the llanos in many places are becoming more wooded on account of the diminution in numbers of cattle.‡

Losses of cattle by drought and flood, though considerable, seem to be no greater in proportion than those expected in summer and winter by our own Western ranchers. In the wet season the crocodiles, the ferocious little fish called caribes, and during all seasons the jaguars, exact toll from the herds. These losses through climatic conditions and voracious animal life would not, however, seriously retard the growth of the industry. The cause of its paralysis must be found elsewhere.

During the War of Independence (1812-1821) it is related on the authority of an eye witness that in some parts of the plains the wild horses and cattle were so numerous as to render it necessary for a party of cavalry to clear the way for the march of the patriot

* Hiram Bingham: Journal of an Expedition Across Venezuela and Colombia, New Haven, Conn., 1909, pp. 73, 117.

† H. J. Mozans: Up the Orinoco and Down the Magdalena, New York and London, 1910, p. 128.

‡ Wilhelm Sievers: Venezuela und die deutschen Interessen, Halle, 1903, p. 49.

army. General Crespo, one of the presidents of Venezuela, had, not many years ago, 200,000 cattle on his ranches.* Dr. Mozans was told that, only a few decades before, the number of cattle in the south of the Venezuelan llanos was so great that they were slaughtered for their hides alone and their carcasses abandoned.†

The civil conflict known as the Five Years' War (1866-1870) entirely destroyed many herds and gave a setback to cattle-raising which the frequent revolutions since that time have prevented the industry from overcoming. The herds have become concentrated in the hands of the large owners, who through political or financial influence or show of force can prevent serious losses, and to whom the killing of a hundred head means little. The feeling among a majority of those who in favorable times would own herds is that it is useless to build up a possession which some roving band may sweep away at any moment. The cities of the llanos, dependent on the cattle-industry for their trade, are falling into decay. Many once thriving settlements are now almost deserted.

Colombia has a much more stable government; her grazing land in the llanos is rich and well watered; but development there also has been hampered. There is no outlet to the north for her cattle on account of Venezuelan jealousy. The main outlet to the west is through a high pass to Bogota, and the difficulty of the road as well as the coldness of the air near the summit is a deterrent to communication, especially to the slow movement of cattle.

Trade in Cattle and Cattle-Products. The towns to which cattle may be easily driven take a considerable number from the llanos. A few tanneries exist to make use of the hides, but all the finer leather used in Venezuela is imported. Live cattle are sent to Trinidad and British Guiana, a few going to Cuba. Somewhat over a million dollars' worth of hides a year, on the average, is sold, the bulk being taken by the United States.

Three years ago Venezuela possessed no establishments to make use of slaughtered cattle so as to preserve the beef for any time. Brazil, Uruguay and Argentina manufacture much "tasajo," the jerked salt beef relished by the natives of South America. In 1901, along the Apure River, one such establishment existed, which slaughtered about 100 head a day; but on account of a high import duty on salt, it was found more profitable to ship beef on the hoof, and the venture was abandoned. There is at present no such "saladero," as a tasajo factory is called.

* Perez Triana: From Bogota to the Atlantic, Engl. edit., London, 1902, p. 309.
† Mozans, *op. cit.*, p. 127.

Although Argentina's first meat-freezing plant was put into operation thirty years ago (1883) Venezuela possessed no such place, until, in 1910, an English company founded at Puerto Cabello the chilled-beef plant of the Venezuelan Meat Products Syndicate, which seems to have prospered, if we may judge from the increase of its output. All of its meat goes to the United Kingdom. Were saladeros in existence in Venezuela, there need be no necessary interference on that account with the chilled-beef plants, for the saladero takes lean cattle, while the foreign beef trade demands fat beasts, which are secured by paying a higher price than the saladero will offer.*

The Opportunity for Beef-Trade with the United States. The trade in frozen beef thus begun by the English company ought, it would seem, to be inviting to American enterprise. Why should not the United States be supplied with meat from the llanos? The cost of an establishment for freezing beef is moderate, and its plant easily extended if conditions warrant. Communication between Venezuela and either Gulf or Atlantic ports of the United States is much quicker than it is between Argentina and Great Britain, over which latter route so much beef is carried. The United States already takes most of the hides from Venezuelan cattle—why not their meat also? The market for it already exists; it does not need to be created.

If Venezuela is to ship beef to the United States, however, Americans must initiate the work. The natives are disinclined by habit and temperament to engage capital in such undertakings. In view of the disastrous experience of the Bermudez Asphalt Company, an American concern, it could not be a matter for surprise if Northern investors should feel distrustful of the treatment which Venezuela might accord them. Excessive taxes and burdensome restrictions on all foreigners were the characteristics of the Castro Administration. President Gomez, however, although a former associate of Castro, has evinced a favorable disposition toward Northern development of the country. The English plant already referred to doubtless never would have existed if Castro had remained in power. The past two years have given confidence to the operations of those interested in developing Venezuela's natural wealth.

At the present time, it is doubtful whether any meat from the llanos is actually sent to Europe. The English company is yet so restricted in its operations that the fertile valleys near Puerto Ca-

* British Foreign Office Reports, "Venezuela," 1910–1912.

bello could and probably do supply the cattle needed. To tempt American packers, however, direct access to the llanos themselves would seem necessary.

Fortunately, nature has provided one place, as yet unpreempted, where the Coast Range has a gap by which the plains actually extend to the seashore. Through this wide gap the Unare River reaches the Caribbean, somewhat to the west of Barcelona. At this gap would be a favorable location for a large slaughtering plant. As soon as the operations of such a plant warranted the undertaking, a railroad could be run up the valley of the Unare with no obstacle to its construction. This would tap the rich eastern grazing section.

With an impetus thus given to cattle-raising in eastern Venezuela, it would probably be no long time before the short railroad which now extends from Barquisimeto in northwestern Venezuela would cross the mountains which now halt it, and would afford a means of transporting cattle from the llanos of western Venezuela and northern Colombia.

Let a feeling of confidence once be established in the country and railroad communication provided with the llanos, the cattle-industry would rapidly develop. Some of the present hindrances to grazing could be avoided or prevented by a little foresight or energy. Although parts of the llanos are afflicted by summer drought, much of this land is underlain by a good supply of water at a short distance from the surface.* Hand-dug wells could reach this supply and provide for large herds of cattle, but the inert llanero, too lazy to build himself even a proper shelter, has not yet applied himself to the labor.

The final question of those interested would be: What amount of cattle could the llanos be depended upon to support? Should we accept the figure of two million cattle now on the llanos of both Venezuela and Colombia—and this would be a fair estimate—it would give an average of about 13 to the square mile. Texas, in 1900, before her grazing industry had so greatly declined, possessed 9½ million head. Allowing no ground for crops of any kind, this would make 35 to the square mile, or nearly three times the number that the llanos now support.

The llanos could surely support many more cattle in proportion to area than could the extremely dry plains of Texas; but even allowing 35 to the square mile, this would give 5¼ million head. Were conditions to become at all favorable to the grazing industry, doubt-

* Paez, *op. cit.*, p. 95; Humboldt, *op. cit.*, Vol. 2, p. 100.

less in a comparatively few years this number would actually exist there. This would give a basis for a business which would increase the prosperity of Venezuela, supply millions of pounds of beef to United States markets, and to some degree compensate for the failure of our home production to meet the increasing demand.

GEOGRAPHICAL NOMENCLATURE OF AMERICAN SAMOA

By WILLIAM CHURCHILL, F.R.A.I.
Sometime Consul-General of the United States for Samoa and Tonga

A peculiar and distinctive character of the islands of the Pacific—and this holds true no matter whether their settlement is Polynesian, Melanesian or Micronesian—is the abundance of minute place names and the almost total absence of designation for the larger geography of islands and archipelagoes. Along the shores every little indentation of the beach is named and so is every least projection; every trickle of water across the sand into the sea or into the lagoon has a name as a river mouth, and a yard inland across its tiny bar it has a distinct name as a stream. Every group of houses has a town name. In the heart of the forest each clearing where a hamlet once stood bears at least one name and perhaps more. In one of the political centres in 'Upolu, now of German Samoa, the land was cut up into estates no larger than a floor-mat a yard and a fathom in bounding dimensions, yet each had its name.

Among the Melanesians, from New Caledonia to New Guinea, in all such pettiness of minute place-naming it is a very small island indeed which has its own proper name in use among its own inhabitants. The names upon the charts are in most cases the designations given by the inhabitants of other islands who lie so distant that the greater islands are reduced by distance and thus may acquire names as mere dots upon the horizon. The Polynesians and Micronesians generally have reached the stage of naming their own islands. The homogeneous population of the islands of Savai'i, Apolima, Manono, 'Upolu, Tutuila and Manu'a stand alone in the culture of the Pacific in the discovery of a national and archipelagic designation. No race of their congeners has done as much, except that

possibly the Marquesas folk had partially arrived at this end if Te Take be really a race designation. The Samoans have gone yet further. They have set apart under the specific name of Manu'a a subdivision of their archipelago comprising the three islands of Taū, 'Ofu and 'Olosega. In the two instances, Samoa and Manu'a are genuine archipelagic names. They are in no sort an extension of a local designation to more general service.

It is the standardization of the geographic names of Tutuila and Manu'a with which we shall now concern ourselves. As the immediate result of the war of the succession to the Samoan throne upon the death of Malietoa Laupepa, a proper solution of the difficulties of which had beset that realm for two generations, the kingdom underwent partition among the three great powers which more than once had been brought to the verge of war in the effort to give Samoa peace. To England was assigned Savai'i, to Germany 'Upolu, to the United States the smaller islands to the eastward, Tutuila, Manu'a and the negligible Rose Island, remote and uninhabitable. Through exchange Germany acquired from Great Britain its Samoan assignment and thus, in possession of the larger western part of the archipelago, assumed the name of Samoa.

Our national interests centered in the magnificent harbor of Pagopago. They were wholly naval. The American claim to these interests has been continuous from the day when Wilkes entered into treaty with the Chief Mauga in 1839 and secured rights to a naval base. After the partition these islands were so lightly regarded by the government in Washington that they had no higher designation than that of the Tutuila coaling station. Upon the islands themselves, as the naval commandment found it necessary to institute some sort of governmental machinery, such interpreters as were available selected a title for the new unit of administration which in English means Naval Colony of Tutuila and Manu'a. For the first time a fitting name has been selected by the government in the last year or so, for in the commission of Governor Crose the land is designated American Samoa.

The recent publication of the map of American Samoa by Dr. Kurt Wegener of the seismological bureau in Apia* calls attention to the need of standardization of the names of Samoan places. In connection with my ethnologic studies of the Samoans I had already been forced to deal with the difficulties at present existing, and with the assistance of King Malietoa Laupepa I was able to secure a

*Cf. *Bull.*, Vol. 44, 1912, pp. 506–512. The note accompanying Dr. Wegener's map (*Pet. Mitt*, Vol. 58, I. 1912, pp. 208–209) deals briefly with the spelling of native place names.—Ed.

ruling from the chiefs of each Samoan town upon the proper form of the names of their town and its adjacent objects. From my forthcoming greater work upon Samoa in which these results are discussed at length I extract here a list of the place names of American Samoa in the forms which were determined by the best island authorities as standard. In this list I have dealt principally with town names and the more conspicuous of the mountains, capes and bays. In one detail I may seem to be too minute. I have included the names of the *malae* or open spaces of the towns, and with reason. The center of all Samoan life is the town green. Upon it faces the imposing house of the town devoted to hospitality toward the visitor. It is flanked by the homes of the principal men of the town, and the fourth side is always open to the sea or to the main highway. Here is the theater upon smooth grass and under noble trees where are played out the great events of the community, the declaration of war, the marriage of its village maid, the feasts which make glad the heart of man, the pleasant evenings filled with the harmony of song and the graceful posturings of the dance. The voyager who makes his way to a welcome in any one of these towns will show himself a worthy guest if he uses the name of the *malae* to which he is led in simple hospitality. The inquirer will hear the name of the *malae* quite as often as the name proper to the town when he asks where he is. It will be of advantage to include these names in such a list as this.

When once the names in Samoan have been accurately determined the difficulties of standardizing them for general geographic use are but two, one of spelling and one of grammatical usage.

That of spelling has to do with the sound *ng*, the palatal nasal which we know as the *ng* of *singer*. It is unfortunate that in our orthography we have made no provision whereby we might differentiate this sound, a true single consonant, from the double consonant *ng* of *finger* in which the palatal nasal serves as preface to the palatal sonant mute. This difficulty exists only in the English; it is merely a matter or transliteration, for the Samoan has here no sound other than the palatal nasal. In reducing the Polynesian languages to writing in the Roman alphabet the missionaries early adopted the letter *g* to represent this sound, for the sound proper to *g* is not found in the island speech. Were we to transliterate this Samoan *g* into English *ng* we should introduce a difficulty of pronunciation quite as hard to deal with as the difficulty of retaining the Polynesian *g* and teaching that it calls for the sound of *ng* in *singer*. I have decided upon the retention of the Polynesian *g* as the less of

the pair of difficulties. Toward this decision I find no slight impulse in the fact that the charts have long followed this practice; in fact I find that so long ago as the first survey of the group Wilkes adopted the form Pagopago although almost all of the place names of his charts are brutally out of order. Apparently he followed a grotesque phonology.

The other difficulty involves the use of the Samoan definite article or very weak demonstrative *le*. In the manner of our speech we keep the article separate from its noun save in poetry and hymns. But the manner of the Samoan speech is different. Grammar has not attained to the dominant position which it has in our speech. There are times when it seems perfectly proper to the Samoan to compact article and noun into a single vocable; there are times when he preserves the distinction. There is no rule whereby the usage may be determined; it is instinct in the language that there shall be this flexibility. Our determination must rest upon Samoan usage and that may be determined only upon the spot. In this list I have conformed to unanimity of Samoan usage without attempt to wrest the Samoan into conformity with our syntax, which is utterly inapplicable to the conditions of his speech.

With this introduction I present the standard list of the geographical names of our new possession of American Samoa. In each case I have added such notes as will serve to identify the places upon the charts. In addition I have given the translation of the name wherever that is beyond dispute. The many instances in which the name is of uncertain or obscure signification will better be dealt with in my larger work:

Afao, town, Samatua district, Tutuila west.

Afono, town, Alataua district, Tutuila east.

Aitulagi, town, Leasina district, Tutuila west. In the high titles of ceremony this town name stands for western Tutuila in the phrase "Saving the grace of Fofō and Aitulagi."

Alao, town, Le Vaifanua district, Tutuila east.

Alataua, a land of Tutuila east, comprising four towns. (Road of war.)

Alofasau, village, Aunu'u.

Alofau, town, Le Vaifanua district, Tutuila east.

Amaluia, town, Samatua district, Tutuila west.

Amanave, town, Tapuaiga district, Tutuila west.

Amouli, 1. town, Le Vaifanua district, Tutuila east.
2. southwest cape, Taū, Manu'a. (Black bearing-pole.)

Aniutea, malae, Aitulagi. (White coconut.)

Aōa, town, Le Vaifanua district, Tutuila east.

Aoloau, town, Leasina district, Tutuila west.

Asili, town, Samatua district, Tutuila west. (The highest.)

Asotau, malae, Vailoa. (Day of fighting.)

Asu, town, Leasina district, Tutuila west. (Smoke.)

Aua, town, Pagopago district, Tutuila east.

Aufotu, southeast cape, Taū, Manu'a.

Auloto, malae, Afao.

Aunu'u, town and islet, Le Vaifanua district, Tutuila east.

Auvai, malae, Poloa. (River bank.)

Fagaalu, town, Pagopago district, Tutuila east.

Fagafue, village, Asu. (Bay of convolvulus.)

Fagaitua, town, Alataua district, Tutuila east. (Bay behind.)

Fagale'a, town, Nofoa district, Tutuila east. (Short bay.)

Fagali'i, town, Tapuaiga district, Tutuila west. (Tiny bay, or bay of chiefs.)

Fagamalo, town, Tapuaiga district, Tutuila west. (Conquerors' bay.)

Fagane'ane'a, town, Itu'au district, Tutuila east. (Bay of delight.)

Fagasā, town, Nofoa district, Tutuila east. (Sacred bay, the Fungasar of Wilkes.)

Fagatele, town, Nofoa district, Tutuila east. (Great Bay.)

Fagatogo, town, Pagopago district, Tutuila east, the seat of the American government of the islands. (Bay of mangroves.)

Fogausa, cape, near Alofau, Tutuila east.

Failolo, town, Tapuaiga district, Tutuila west.

le Fale o Mavaega, malae, Leone. (House of the dying wishes.)

Faleasao, town, Taū, Manu'a.

Falemoso'oi, malae, Fagasā. (House of the ylangylang.)

Faleniu, town, Tualauta district, Tutuila west. (House of coconuts.)

Faleolati'a, malae, Pavaiai.

Falepule, malae, Fagasā. (House of authority.)

Falesau, malae, Leone.

Faletolu, town, Taū, Manu'a. (House of three.)

Fatulēgae'e, malae, Fagaitua. (Rock unshaken.)

Fitiuta, town, Taū, Manu'a. (Fiji inland; a mystery, since Fitiuta is on the shore.)

Futiga, town, Tualatai district, Tutuila west. (Plucking place.)

Gagamoe, malae, Pagopago.

'Ili'ili, town, Tualauta district, Tutuila west. (Pebbles.)

Itu'au, a land of eastern Tutuila comprising two towns. (Army.) It is joined in a ceremonial phrase of the most ancient courtesy to honor eastern Tutuila, "Saving the grace of Itu'au and Alataua."

Laloalou, malae, Aoloau.

Laloifi, malae, Leone. (Under chestnut boughs.)

Lalotavai, malae, Aōa. (Under the tavai tree.)

Lalo'ulu, 1. malae, Asu. (Under the breadfruit.)
2. malae, Se'etaga.
3. malae, Vatia.

Laulii, town, Alataua district, Tutuila east. (Small beach-plain.)

Leasina, a land of western Tutuila comprising three towns. (White.)

Le'auuliuli, village, Aunu'u. (The black stalk, see Amouli.)

Leone, town, Samatua district, Tutuila west. (The sands.)

Lefutu, inland village, Tula. (The barringtonia tree.)
Leloaloa, town, Pagopago district, Tutuila east. (The long.)
Lupelele, malae, 'Ili'ili. (Flying pigeon.)
Malaea'imi, malae, Faleniu. (Malae of searching.)
Malaealetalu, malae, Fagatogo. (Malae of the fallows.)
Malaeamanū, malae, Tula. (Malae of good fortune.)
Malaefono, 1. malae, Afono. (Malae of deliberation.)
2. malae, Alofau.
3. malae, Aunu'u.
Malaeloa, town, Tualatai district, Tutuila west. (Long malae.)
Malaetumau, malae, Fagaitua. (Malae firmly established.)
Manu'a, group of three islands, Taū, 'Olosega, 'Ofu.
Manufa'aea, malae, Amanave. (Soaring bird.)
Masausi, town, Sua district, Tutuila east.
Masefau, town, Alataua district, Tutuila east.
Mataava, malae, Amouli. (Point of the channel.)
Matafao, mountain, central Tutuila. (Spear head.)
Matatula, 1. mountain, eastern Tutuila. (Bald peak.)
2. east cape of Tutuila.
Matu'u, town, Itu'au district, Tutuila east. (Heron.)
Niualuga, malae, Failolo. (Niua above, or windward Niua.)
Nofoa, a land of eastern Tutuila comprising three towns. (Abiding place.)
Nua, town, Samatua district, Tutuila west.
Nu'uuli, town, Itu'au district, Tutuila east. (Black land.)
'Ofu, island, Manu'a.
'Olosega, island, Manu'a. (Fortress of parrakeets.)
Onenoa, town, Le Vaifanua district, Tutuila east. (Sand waste.)
Paepaealā, malae, Aua. (Paved with sails.)
Pagopago, land comprising three towns, and town, Tutuila east.
Pavaiai, town, Tualauta district, Tutuila west.
Pola, islet, north coast Tutuila.
Poloa, town, Tapuaiga district, Tutuila west.
Sailele, town, Le Vaifanua district, Tutuila east.
Salaia, Motu o Salaia, island of Salaia, the highest title of Tutuila; the name is found elsewhere only as Salayer at the southern tip of Celebes.
Saluavatia, village, Aunu'u. (A second Vatia.)
Samatua, a land of western Tutuila comprising six towns. (Elder.)
Saole, a subdistrict of Sua and Le Vaifanua, comprising the three towns Aunu'u, Amouli and Alofau.
Se'etaga, town, Samatua district, Tutuila west. (Sliding place.)
Seuga, malae, Poloa. (Hunting.)
Sili, town, 'Olosega. (Highest.)
Siliaga, malae, Aoloau.
Si'ulagi, northwest cape, Taū. (Sky's end.)
Sua, joined in the honorific phrase for eastern Tutuila "Saving the grace of Sua and Le Vaifanua."
Tafuna, town, Tualauta district, Tutuila west.
Talamoa, malae, 'Olosega. (Cockspur.)

Tapatele, east cape, Taū.

Tapuaiga, a land of western Tutuila comprising five towns. (Sacred abiding place.)

Taputapu, west cape, Tutuila.

Taputimu, town, Tualatai district, Tutuila west. (Sacred rain.)

Togalei, malae, 'Ofu.

Tualagi, malae, Amanave. (Back of the sky.)

Tualatai, a land of western Tutuila comprising four towns. (Tuala by the sea.)

Tualauta, a land of western Tutuila comprising five towns. (Tuala inland.)

Tuautu, town, Tualatai district, Tutuila west.

Tula, town, Le Vaifanua district, Tutuila east. (Bald, bare.)

Tutuila, third in size of the Samoan Islands.

Utuloa, south cape, Tutuila. (Long cape.)

Utumea, village, Alao. (Red cape.)

le Vaifanua, see Sua. The name signifies a gap in the land, it is in effect an isthmus save that the Samoan attention is directed upon the bays which restrict the land. A land of eastern Tutuila comprising nine towns.

Vailoauta, town, Tualatai district, Tutuila west. (Long river inland.)

Vainiu, malae, Matu'u. (Water of coconuts.)

Vaitogi, town, Tualauta district, Tutuila west.

Vatia, town, Le Vaifanua district, Tutuila east.

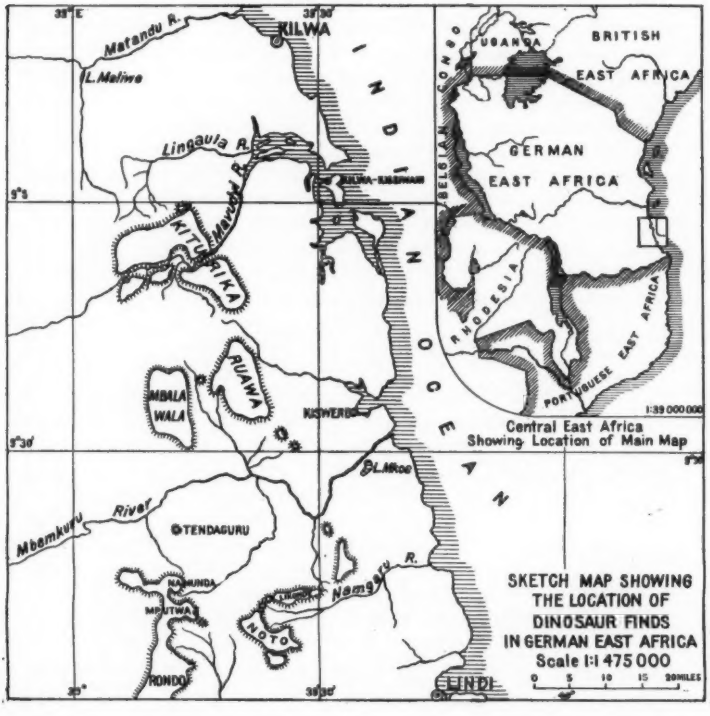
The record may well be completed with a note as to pronunciation. All the vowels have the Italian sound and are pronounced in full, the consonants as in the English *g,* already explained. Except where otherwise marked the accent lies upon the penult. The character ', the inverted comma and not the apostrophe, indicates that the vowels between which it is set must not be permitted to coalesce.

THE DINOSAURS OF EAST AFRICA

Geographers as well as paleontologists are interested in the distribution and the former geographical conditions under which the "largest of all known land animals" lived. These animals are the East African dinosaurs discovered by Engineer B. Sattler in 1907 and reported to his German countrymen by Professor Fraas whom Sattler informed of his discovery. The name of Gigantosaurus has been given to them. The Geological-Paleontological Institute of the University of Berlin sent out an expedition under the leadership of Dr. W. Janensch, assisted by Dr. Edward Hennig, to study these remarkable finds and make collections. Dr. Hennig has just pub-

lished a finely illustrated volume* telling how the expedition lived, what it did and describing the country and its peoples. The following facts are condensed from a review† of the book by Prof. Charles Schuchert, Professor of Paleontology in Yale University.

The expedition arrived in the Tendaguru region of German East Africa on April 16, 1909, and remained at work for two years and six months. The digging still goes on under other field operators.



In the first three years, $45,000 was expended by the expedition resulting in 4,000 packages of bones and other natural history material. The Europeans adapted themselves to the tropical climate and educated the negroes to dig out the bones and to harden and pack them. Many porters were employed to carry the packages to Lindi

*Am Tendaguru. Leben und Wirken einer deutschen Forschungs-Expedition zur Ausgrabung vorweltlicher Riesensaurier in Deutsch-Ostafrika. Von Dr. Edw. Hennig, Stuttgart, 1912. 151 pp. Map, ills.

†*Amer. Journ. of Sci.*, 4th Series, Vol. 35, 1913, No. 1, pp. 34–38.

where the bones were boxed and sent to Berlin. From 400 to 500 negroes were usually employed.

The map shows the distribution where exhumations have been in progress. The hill Tendaguru, less than 100 feet high and on a plateau about 650 feet above the sea, is the central point from which all the diggings have been operated. It is in the midst of an extensive dinosaur cemetery, for at one time there were twenty exhumations in operation scattered over thirty square kilometers. In a thickness of about 500 feet exposed along the stream Mbemkuru are found three distinct horizons of soft shale with dinosaur remains separated from one another by hard, cross-grained sandstones to conglomerates that have an abundant marine invertebrate fauna. Though the marine fossils have not yet been determined, Dr. Hennig says that the time represented is not of the upper Cretaceous as was first supposed but of earliest or lowest Cretaceous age comparable to the earlier dinosaur horizon of America. The conditions of deposition appear to have been an alternation of shallow marginal seas that came to be filled with detritus and changed into great mud flats, flooded by rivers and possibly in part by high tides. Three such cycles are recorded.

The largest African animals of that time were truly gigantic in size exceeding by far the mightiest of American Comanchian dinosaurs. It is thought that the largest attained almost twice the length of Diplodocus which is 80 feet long. The neck appears to have been at least fifteen feet longer than that of Diplodocus and a good deal thicker, as the vertebræ of Gigantosaurus are nearly twice as high as in the American genus. "It is very difficult to picture to ourselves the enormous size of such living masses."

Dr. Hennig offers the following as the most plausible explanation of the manner in which these animals came to be entrapped and buried in the sediments:

"We can accordingly assume that a very shallow sea flooded vast areas of marsh land, and at times of ebb the dinosaurs wandered far out over these flats to feed on algae, sea-weed and small marine animals only to be caught in low places by the incoming tides and so drowned and eventually buried. In some cases feet were found standing upright, leading to the conclusion that the animal had become mired in the mud. Because of the very small size of the brain, we may ascribe to them a low mentality and consequently frequent recurrences of the accidental drownings. We may also assume that the flesh-eating animals of the water as well as of the land fed on these cadavers. This explanation, of course, does not

readily apply to the gigantic forms since they could easily have waded out of the flooding waters, but they may have lost their sense of shore direction and, becoming confused, gone into deeper waters and drowned. We may also assume, since the strand line repeatedly rose and fell, as is indicated by the changing characters of the strata, that large land masses were separated into islands and that these were finally submerged beneath the sea with all the life upon them."

Dr. Hennig says in conclusion:

"We may picture to ourselves as follows the wonderfully varied life that dwelt along the strand of this Cretaceous sea. Here trod those dull-witted giants whose necks were more than twelve meters long and up to two meters thick, with length of legs exceeding any known size; here hurried about the dragon-tribe, large and small, down to the tiniest lizard; here appeared herds of armored dinosaurs, terrible in shape, with mighty spines along the back and tail; here hastened past small swift saurians erect upon their hind legs, while others flew through the air; here were the fearsome flesh-feeding robbers and the Gigantosaurians who alone because of their size could escape from them alive and who fed their huge bodies upon plants and smaller sea animals. Scarcely can the noble and prolific animal life of Africa to-day compare in diversity with the assemblage which here lies before us."

GEOGRAPHICAL RECORD

THE AMERICAN GEOGRAPHICAL SOCIETY

MR. ROBBINS RETIRES FROM THE CHAIRMANSHIP OF THE COUNCIL. Mr. Chandler Robbins, Chairman of the Council since early in 1907, declined reelection at the meeting of the Council on Feb. 20 and Mr. John Greenough was unanimously elected to the position. On taking the Chair, Mr. Greenough expressed his appreciation of the honor conferred upon him, adding that he wished to record the obligation of the Society to his predecessor Mr. Robbins for his unequalled services covering a period of forty-one years. Mr. Robbins was elected a Fellow in 1872. In 1886 he was appointed a member of the Executive Committee which then had charge of the affairs of the Society. In 1887 he was appointed a member of both House and Finance Committees, served as Domestic Corresponding Secretary from March, 1897, to November, 1906, and was elected Chairman of the Council on Feb. 21, 1907. Mr. Greenough expressed the feeling of his colleagues in hoping that the Society would long continue to enjoy the assistance of Mr. Robbins as a member of the Council and of its Committees.

MR. MADISON GRANT ELECTED TO THE COUNCIL. The Council on Feb. 20 elected Mr. Madison Grant a Councillor of the Society for the term expiring in 1914.

THE SOCIETY'S DELEGATE TO THE TENTH INTERNATIONAL GEOGRAPHICAL CONGRESS. The Council, at its February meeting, appointed Herbert L. Bridgman,

M.A., President of the Department of Geography of the Brooklyn Institute of Arts and Sciences, its delegate to the Tenth International Geographical Congress, which will meet in Rome, March 27-April 3, 1913.

GROWTH OF THE LIBRARY AND MAP COLLECTIONS. Dr. Randall-MacIver, the Librarian, in his report to the Council on the progress made during 1912, says that the accessions of books, periodicals and pamphlets amounted to 5,570 and of maps and atlases to 1,210. Nearly all the maps and 460 volumes were sent gratuitously by the publishers. In the past year notable gaps in the literature of certain subjects were filled. The policy in the future should be to make our collections exhaustive in one subject after another. Within the next few months the sections on North and West Africa will be practically complete from the year 1800. Lists for South, Central and East Africa have been prepared and those for Indo-China and China are now in course of preparation.

The arrangement of the stack floors has been reorganized. Every volume and pamphlet now has its exact place assigned. The ground floor and first mezzanine are occupied by the Regional Geography of the Old and New World respectively. The next floor is occupied by general works of travel in which the library is very rich; by books on the scientific divisions of geography and by the proceedings and transactions of geographical societies. The second mezzanine contains mainly publications of learned societies, the third floor is assigned to official geographical and statistical reports of various governments throughout the world, and the third mezzanine will soon be required for the increasing number of these government papers. It is expected this year to bind several thousands of volumes that are still in paper covers. The library staff has been increased to cope with the growth of the work. The accessions of maps have quadrupled within the past year.

THE CHARLES P. DALY MEDAL AWARDED TO MR. ALFRED H. BROOKS. At the meeting of the Council on Feb. 20 the Charles P. Daly Medal for Geographical Research was unanimously awarded to Alfred Hulse Brooks, the geologist of the U. S. Geological Survey in charge of the Division of Alaskan Mineral Resources, in recognition of the excellence and the importance of his work in the exploration and mapping of Alaska.

MEETINGS OF THE SOCIETY. The Society had a special inter-monthly meeting on Feb. 11, 1913, at the Engineering Societies' Building. Vice-President Greenough in the chair. Mr. Albert B. Osborne delivered a lecture entitled "Across the Adriatic," which was illustrated by lantern views.

A regular meeting of the Society was held in the Engineering Societies' Building, No. 29 West 39th Street, on Tuesday, Feb. 25, 1913, at 8.30 o'clock. Vice-President Greenough in the chair. The following persons recommended by the Council were elected Fellows:

Charles A. Elsberg, M.D.,
Edward Everett,
William B. Osgood Field,
Lewis B. Gawtry,
H. L. Higginson,
Mrs. R. Hoe,
DeRuyter M. Hollins,
Mrs. Edwin O. Holter,
William Hood,
H. William Hyatt, M.D.,
Samuel K. Jacobs,
John Percival Jefferson,
David Starr Jordan,
Harris Kennedy, M.D.,
Harry K. Knapp,
Augustus S. Knight,
Arnold Kruckman,
Walter G. Ladd,
Adrian V. S. Lambert,
Mrs. James T. Leavitt,
Meyer H. Lehman,
John W. Leonard,
Miss Agnes Vinton Luther,
Robert Grier Monroe,
William R. Northrup,
Charles S. Untermeyer.

Professor Ellsworth Huntington then addressed the Society on "Rambles in Asiatic Turkey," with lantern illustrations.

NORTH AMERICA

THE NATIONAL WATERWAYS COMMISSION. This Commission composed of twelve members of the Senate and House, was created by Act of Congress of

March 3, 1909. The duty imposed upon it by statute was to investigate questions pertaining to water transportation and the improvement of waterways and to make recommendations to Congress. The Final Report* discusses a number of topics listed below and offers a number of recommendations.

1. *Canals.* The Commission recommends as advisable the proposed canal connecting Lake Erie with the Ohio river near Pittsburg and considers feasible the Lake Erie to Lake Michigan canal by the Maumee river and the Anacostia canal to Chesapeake Bay.

2. *Railway Interference.* A careful statement of the situation accompanies this discussion. The cooperation between railroads and waterways is a vital point in the success of the waterways policy, but the cooperation should stop short of the elimination of water competition by ownership which will allow discriminating practices while it should not prohibit or discourage legitimate investments by railroad companies in waterway lines. The control of waterways by the Interstate Commerce Commission is recommended as a step towards a remedy.

3. *Water Terminals.* The Commission advocates a public control of terminals and the condemning for public use of water frontage held undeveloped by railroads or other private interests.

4. *Storage Reservoirs.* This has been a mooted point in the waterways discussion. The Commission does not advise reservoirs without reserve, nor do they overlook their value. A safe basis for the consideration of this type of control is given in the report.

5. *The Influence of Forestation.* From the somewhat heated arguments by the advocates for and against forestation as a means of river control the Commission has gleaned valuable truths. It has been able to view both sides of the question with equanimity and consequently its conclusions and recommendations, although moderate, represent the extent of safe procedure to-day. Here again the novice who desires to begin his studies of the waterways problem may find a safe, concise and clear view of the field. In the appendix, Zon has presented his views of the problem and has added an extensive and valuable bibliography.

6. *Desirable Legislation.* A discussion of the legal aspects of the question. The Report is to be highly recommended. ROBERT M. BROWN.

ANNUAL RAINFALL AND TEMPERATURE OF THE UNITED STATES. A study of the annual rainfall and temperature of the United States, begun by Professor Nipher and completed by Mr. George A. Lindsay, has been published in the *Transactions of the Acad. of Sci. of St. Louis,* Vol. XXI, 1912, No. 2, pp. 71-78. (Reprinted in *Mo. Wea. Rev.*, 1912, pp. 720-721.) By a process of interpolation of rainfall amounts and of temperatures it has been determined what was the total depth of rainfall over the United States in each of the fourteen years considered (1891-1904). The mean annual precipitation over the United States ("excluding the outer parts") is 1,308 cubic miles, and the mean annual temperature is 52.9° F. The total rainfall in cubic miles falling upon the State of Missouri during 10 years was within 2 per cent. equal to the discharge of the Mississippi River at St. Louis during that interval. It is easy to see how small is the amount of water which reaches the sea through the medium of ordinary river drainage as compared with the amount which actually falls as rain or snow. R. DEC. WARD.

THE LOWERY COMPILATION OF EARLY AMERCAN MAPS. A valuable addition to the history of American cartography came from the press of the government printing office last year under the title: "A descriptive list of maps of the Spanish possessions within the present limits of the United States, 1502-1820." Seven hundred and fifty maps belonging to this period are described. In many instances the descriptions are accompanied by long commentaries referring not only to early American cartography but also to the history of exploration on the American continent. The manuscript was compiled by Woodbury Lowery, a scholarly investigator and historian of the early Spanish settlements on this hemisphere. The notes and editing are due to Philip Lee Phillips, chief of the Division of Maps and Charts at the Library of Congress.

* Final Report of the National Waterways Commission. Senate Document, No. 469. 62d Congress. 2d session. 579 pp. Goverment Printing Office, Washington, 1912.

CANADA'S NEXT TRANSCONTINENTAL RAILROAD. The Grand Trunk Pacific R.R. announces that the gap between the eastern and western heads of the track in British Columbia is now only 426 miles long and work on this part of the line is under way in sections throughout its entire length. East of Prince Rupert, the Pacific port of the road, the completed track is now 195 miles from the Pacific coast.

CENTRAL AMERICA

ELLSWORTH HUNTINGTON'S VISIT TO GUATEMALA. Professor Ellsworth Huntington left New Haven on March 4 for a short visit to Guatemala chiefly to see the remarkable ruins there and study the various types of forest, jungle and savanna or other vegetal growths in which they are located. Some are described as in the densest, most vigorous tropical forest and some in comparatively dry and open situations. He also desires to see whether the abundant terraces which he believes are of climatic origin and which are found in Mexico as far south as Oaxaca, continue into Central America. The work is a continuation and testing of some of the results which he obtained last year in Yucatan and Mexico. He expects to return home not later than April 9.

SOUTH AMERICA

ANNIVERSARY OF THE LIMA GEOGRAPHICAL SOCIETY. The Sociedad Geografica de Lima, one of the most notable of the geographical societies of South America, whose work and publications have made many additions to our knowledge of Peru and contiguous regions, will celebrate the twenty-fifth anniversary of its founding on February 22, 1914.

THE ARGENTINE MILITARY GEOGRAPHICAL INSTITUTE. The first annual report of this institution has been issued for the year 1912. It was founded in 1884 after the Andean campaign. It now forms the third division of the General Staff. Its chief work consists in mapping. The staff has been particularly active in the province of Buenos Aires where surveying has been carried forward to a very advanced stage.

The field work undertaken by the Institute provides the required data for the compilation of four important sets of Argentine maps: (1) Educational wall-maps on a scale of 1:2,000,000 showing the general configuration and the principal features of the country. Flamsteed's modified projection or Bonne's will be used for this map. (2) 21 sheets of the International Map of the World. (3) A general atlas of the Republic on a scale of 1:100,000 which will consist of 1,237 sheets. (4) Detail maps on a scale of 1:25,000. In addition special maps of general or particular interest are compiled as occasion arises. The Greenwich meridian is adopted.

At present the work of compiling the Argentine sheets of the International 1:1,000,000 Map of the World is being prosecuted. Work on this map was begun in February, 1911. This month was devoted to the calculation of the projection and the construction of the required system of coordinates. Then the geographical determination of points shown on the sheets was begun along with actual drafting. The end of August, 1911, witnessed the publication in provisional form of sheets I 21 Buenos Aires, H 21 Concordia and G 21 Corrientes. Final corrections are now being made and these maps are soon to be available in permanent editions. The hydrographic plate of every sheet had been prepared by the end of 1912 while the topographic detail of sheets I 20, J 20, K 20, J 21, and N 19 was being drafted.

AFRICA

MAGNETIC SURVEYS IN THE SAHARA. In the course of the great work which the Carnegie Institution of Washington is prosecuting of making a magnetic survey of all parts of the world, it has now directed its attention to the Sahara. On October 15, a party under the leadership of M. W. Sligh left Algiers to establish the magnetic elements in the Western Sahara.

STUDYING TRANS-SAHARAN RAILROAD ROUTES. According to Paris correspondents in British newspapers the French sent out parties last winter, to

study various suggested routes for railroads across the Sahara to connect Algeria with Central Africa. Several members of these parties have returned to France and the information they bring seems to show that the scheme is practicable and does not involve serious engineering difficulties. One party traveled southeast from Colomb-Bechar, the southwestern terminus of the Algerian R. R. system to Insala, Agades and Lake Chad. Another party, branching off at Insala, went due south to about the latitude of Timbuktu then turned east and rejoined the first route at Agades. A third starting from Gao on the Niger traveled northward to Silet. All the information brought by the surveying parties will be carefully studied with a view to evolving if possible a definite plan for a railroad across the desert.

CARTOGRAPHY OF THE BELGIAN CONGO. The progress of cartography in the Belgian Congo is best revealed by a comparison of the 12-sheet map prepared by Wauters between the years 1896 and 1899 and the 1:1,000,000 map recently issued by the Ministère des Colonies. As a rule the most informatory maps have been the ones published in official bureaus either by the former "Service Cartographique de l'État Indépendant du Congo," or by the Belgian Colonial office. A number of general political maps on a scale of 1:1,000,000 were published between 1895 and 1910. The government also published physical and economic maps of the region. Practically all of the cartographic output of various publishers has been based on official documents.

The *Revue Congolaise* (Vol. 2, No. 4, April 1912, pp. 378-379) gives a list of the more important regional maps of the Belgian Congo, among which the following are best known:

(1) Carte du Bas-Congo, by Hubert Droogmans, on a scale of 1:100,000, in 15 sheets; (2) Carte du Katanga (territoires gérés par le Comité Spécial du Katanga), published in Brussels in 1903 and 1910 by the same author; (3) Map of the environs of Lake Albert and Albert Edward, by Moisel based on Stuhlmann's data, 1901; (4) Carte de la région du Mayombe au 125,000e, by M. Diderrich, Brussels, 1899; (5) Carte Scientifique du Katanga au 50,000e, by Ch. Lemaire, published in "Atlas accompagnant les mémoires scientifiques de l'expedition du Katanga," Brussels, 1901; (6) Carte fluviale du Congo de Brazzaville à Liranga, (26 sheets on a scale of 1:50,000), Paris, 1908; (7) Carte fluviale d'Oubangi, 40 sheets on a scale of 1:50,000, Paris, 1906; (8) British Admiralty charts: No. 638m Africa, West Coast, River Congo and adjacent creeks. Banana creek. No. 1991m. River Congo, Camoens Point to Princes Island; (9) Carte des rêserves minières existant au 15 janvier 1911. Published by the Comité Spécial du Katanga.

PROGRESS IN RHODESIA. The Report of the British South Africa Company for the year ending March 31, 1912, shows important progress in the development of both Southern and Northern Rhodesia. In Southern Rhodesia there are now 463,923 cattle, more than two and a half times the number owned there at the time of the last census, seven years ago. The production of tobacco has increased in three years from 132,310 pounds to 1,397,000 pounds and the crop for the coming season is estimated at over 2,500,000 pounds. The citrus fruit industry is growing and the quality of the product is excellent. Land values are rising owing to the gradual establishment of immigrant farmers of good type with considerable capital. The outputs of gold, coal and chrome iron have exceeded all previous records. In Northern Rhodesia the suitability of much of the country for cattle raising is becoming more and more evident and the introduction of the best breeding animals from England is having a good effect. The cotton industry is growing and nearly 5,000 acres are now in that crop.

NEW ITALIAN COLONIES IN AFRICA. The text of the royal decree relating to the administrative subdivision of the North African territory lately conquered by Italian troops is given in the first 1913 number of *l'Esplorazione Commerciale* (Vol. 28, No. 1, Jan. 1913). According to this document the new Italian possession is divided into the two distinct colonies of Tripolitania and Cirenaica with capitals at Tripoli and Bengasi respectively. A governor is appointed for each colony by the King upon the joint recommendation of the Ministers of Colonies

and of War. He is directly responsible to the Minister of Colonies for all acts committed in his executive capacity.

ASIA

SHORT CUT FROM SHANGHAI TO PEKING. China has opened her shortest cut from Shanghai to Peking. Early in December through R.R. traffic was opened from Pukow, on the Yangtze River to Tientsin, and a journey is now possible from Shanghai to Peking in 40 hours as against 5 days by the previous shortest route. The only other line from the Yangtze to Peking is that from Hankow, a length of some 755 miles. The newly opened line from Pukow to Tientsin is 626 miles, and to that has to be added the 73 miles from Tientsin to Peking and the 193 miles from Shanghai to Nanking, making the total rail distance from Shanghai to Peking some 892 miles, which is broken only by the Yangtze River at Nanking. (Condensed from *Daily Cons. and Trade Repts.*, No. 41, Feb. 18, 1913).

AUSTRALASIA AND OCEANIA

CARL LUMHOLTZ'S NEXT EXPEDITION. *Petermanns Mitteilungen* (December, 1912, p. 347) says that Carl Lumholtz expects soon to go to Borneo and secure on the lower Boeloengan River the service of 60 or 70 natives to go with him to Diguel R., New Guinea, which he hopes to explore at least as far as the limit of navigation. From this point it is his plan to penetrate into the unknown region and establish the eastern extension of the Great Snow Range. A European topographer will assist him in his route surveys. He is said to have the financial support of the Royal and the Netherlands Geographical Societies, but if his funds do not permit the carrying out of his entire programme of work in New Guinea, he will remain longer in Borneo. In this case he will very likely extend the exploration of the Boeloengan River, which is now known only in its lower part.

RAINFALL OF AUSTRALIA. The Central Weather Bureau of the Australian Commonwealth has issued an "Average Rainfall Map of Western Australia," which is the fourth of a series now being prepared by the Bureau to show the annual rainfall distribution throughout the Commonwealth. The heaviest rainfall is, of course, over the southwestern part of the state, which has a long coastline exposed to the Indian Ocean and to the full force of the westerlies. The rainfall there, and over the southwestern half of the state, except in the eastern gold fields, is a winter one, 80 to 90 per cent. of the annual totals in the southwestern agricultural areas falling during the growing period, April to October. From the coast inland, for about eighty to one hundred miles, the rainfall decreases rapidly, but the southwestern area of fifteen or more inches of fall covers about 75,000 sq. miles. The full effects of the westerly winds are apparently not felt beyond Lat. 27° S, the fifteen-inch isohyet, and from there to the tropic the rainfall is scanty, and occasionally amounts to only three or four inches a year. North of the tropic the Kimberly district receives good tropical rains during the summer, from November to March or April. It is interesting to observe that the De Gray and Fortescue districts are dependent for their rainfall partly on tropical storms, commencing about December, and partly on winter rains from the Indian Ocean.

Australia's eastern highlands have heavy rainfall, while the plains to the west, in the rain-shadow, are arid. The problem is very similar to that in several parts of our own country, for example in the Yakima Valley, in Washington, or in the Nevada desert, east of the Rocky Mountains. Water for local irrigation may be found in rivers which descend from the well-watered mountain summits and upper slopes, but reservoirs must be built, and irrigating canals. In New South Wales there is an important project in hand for collecting the winter floods of the Murrumbidgee River for summer use. A reservoir with a dam 240 feet high is to be built, holding 33,000,000,000 cubic feet of water. Channels amounting to 1,000 miles in length are to be built to conduct the water to a large area more than one hundred miles to the west. Thus is man expressing his dissatisfaction with the provision which nature has made, and taking the water from the place where it falls as rain to the place where he needs it

most. Furthermore, he is changing the season at which the water is supplied, from the winter, when the floods naturally come, to the summer when his need is the greatest.

R. DEC. WARD.

EUROPE

SEMI-CENTENNIAL OF THE DRESDEN GEOGRAPHICAL SOCIETY. This Society celebrated the completion of the first fifty years of its existence on March 14. Among the exercises was an address by Prof. Dr. Partsch of Leipzig entitled "In Arizona, dem Lande des Sonnenscheins und des Silbers," with lantern illustrations. A banquet completed the day.

PUBLICATIONS OF THE ITALIAN MINISTRY OF COLONIES. This new department is continuing the publication of the series of colonial reports and monographs of high scientific value which had been undertaken by the former central bureau of colonies at the Ministry of Foreign Affairs. Most of these volumes contain data on economic geography, the result of direct observation in the course of explorations undertaken for the account of the Italian government. As such the set constitutes a valuable work of reference on oversea Italian territory.

POLAR

THE BRITISH ANTARCTIC EXPEDITION. The news came on Monday, Feb. 10, that the *Terra Nova* had returned to New Zealand bringing the sad tidings that Captain R. F. Scott commander of the British Antarctic Expedition, and four of his men had perished after reaching the South Pole. The bodies of Captain Scott, Dr. E. A. Wilson and Lieut. H. R. Bowers were found only 155 miles from the winter camp on McMurdo Sound. Captain L. E. G. Oates met a similar fate on March 17, 1912, some twelve days, it is believed, before Scott, Wilson and Bowers perished. Petty Officer Evans had died a month earlier. All the other members of the party have returned on the *Terra Nova*. An account of the expedition will be printed in the *Bulletin* later. Meanwhile a summary of the terrible disaster which all the world deplores and of some results of the expedition will be given here.

As the *Bulletin* reported (Vol. 44, 1912, pp. 270-277) the party under Captain Scott bound for the Pole left Hut Point, McMurdo Sound, on Nov. 2, 1911, and on Dec. 10, reached the Beardmore Glacier, which was ascended. On Dec. 21 they stood on the high plateau of the Antarctic Continent, 8,600 feet above sea level. From this point Captain Scott and his companions dragged their sledges all the way to the Pole. The last supporting party left Captain Scott and his four comrades in excellent health and spirits on Jan. 4, 1912, in 87°35′ S. about 153 statute miles from the Pole. The party travelled an average of twelve miles a day to the Pole, which they reached on Jan. 17. They found the record and tent which Amundsen had left there. Captain Scott used his four-inch theodolite in taking sights, while Amundsen had depended on his sextant with an artificial horizon. The determination of the position of the Pole by the two explorers differed by only a half mile.

On the return journey the party sledged about eighteen miles a day to the summit of the Beardmore Glacier. Nearby was Buckley Island, a large nunatak where coal was found and fossil bearing sand-stones. These fossils will probably settle the age of the latest sedimentary deposits yet found in Victoria Land. While descending the glacier, fossils of much greater age, found in limestone were obtained from the side of Cloudmaker Mountain. In all thirty-five pounds of geological specimens were carefully packed, taken by Scott, to his last camp, and have been brought home by the *Terra Nova*.

Petty Officer Edgar Evans had been failing in strength from the time of reaching the Pole. He fell, during the descent of the glacier, injuring his head. The progress of the party was delayed by his condition and on Feb. 17 he died. This delay made serious inroads upon the surplus provisions and unduly advanced the time of return. The average distance between two main depôts was sixty-five miles, which meant that the party must average over nine miles per day in order to obtain full supplies. But the best march on the return was only nine miles in a day and in the later stages of the journey it fell as low as three

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miles. Captain Oates became almost helpless and, to crown their difficulties, a terrible blizzard overwhelmed them and they were compelled to pitch their tent only eleven miles from One Ton Camp, where abundant resources awaited them. They were too weak to travel further. Captain Oates left the tent in the blinding storm and probably died not far away, though the search party failed to find his body. The bodies of the other three men were found in the tent. All of the records were recovered, including Captain Scott's diary, which contained a "Message to the Public," one of the bravest and most pathetic records of hardihood, endurance and courage that was ever penned.

The three men were buried in the tent where they had died and a cairn and cross were erected over their grave.

While Scott was on his way south the northern party, consisting of Lieut. Campbell, Surgeon Levick, geologist Priestly, two petty officers and a sailor, landed on the mainland of South Victoria Land at Terra Nova Bay on Jan. 8, 1912, and set out with the intention of proceeding to the northern extremity of the plateau, between Mt. Melbourne and the Nansen range. The party returned to Terra Nova Bay on Feb. 17, having accomplished its work. It expected to be picked up by the *Terra Nova,* but, as the *Bulletin* reported last year (p. 272), the ice conditions prevented the vessel from approaching the bay. The Campbell party, 200 miles north of the headquarters of the expedition, was thus compelled to spend the winter on the mainland in a snow igloo, living chiefly on seal meat, eked out by the insufficient supplies they had brought with them. They were able to return to the base station in November last.

The scientific work of the expedition, for which it was admirably equipped, was carried on assiduously and is expected to yield results of great value. The irreparable calamity that befell the expedition has in no way interfered with its scientific success. The American Geographical Society, as well as many similar organizations, cabled an expression of its deep sympathy to the Royal Geographical Society. The despatch sent by President Huntington was as follows:

"On behalf of the Council and members of the American Geographical Society I am requested to send to you the expression of our profound sympathy for the loss of Captain Robert F. Scott, to whose courageous achievement and devotion to the cause of science this Society desires to bear earnest tribute, together with profound sympathy for those to whom his untimely death has brought such great sorrow."

In opening the meeting of the Society on Tuesday Evening, Feb. 11, Vice-President Greenough made these remarks:

"I cannot omit some few words with reference to the tragedy in the Antarctic announced to-day in the papers. We have all read the account and it seems clear that a disaster has overtaken Captain Scott and his party, to parallel which we have to go back to the fate of Captain DeLong and his companions in the Jeannette Expedition. The diary of the latter with its daily record of famine until the end is the saddest story of travel; and the pathos and heroism of it appear to have been repeated in the present instance. That Captain Scott should have been taken away just at the brilliant conclusion of his many years of toil in the cause of science makes his end doubly tragic in the loss to the field of knowledge as well as to his friends. I know that I express the feeling of every member of the Society in saying that we are filled with sorrow for his untimely death, with admiration for his character and achievements and with deepest sympathy for his youthful widow and child. His fame will be associated indissolubly with Antarctic discovery and his name will be added to the list of glorious martyrs who have sacrificed their lives for the advancement of human enlightenment."

ANTHROPOGEOGRAPHY

Inter-University Conference on "Culture and Environment." Two important conferences have just been concluded between members of Yale University on the one hand, and Columbia University and the American Museum of Natural History on the other. It was proposed by Professor Franz Boas of the Department of Anthropology, Columbia, that a group of interested Yale men should give in New York a number of papers bearing on the general question of "Environment and Culture." A meeting of the

New York Academy of Sciences, Section of Anthropology and Psychology, was called for the afternoon and evening of January 27, and these papers were read:

Professor Keller: The Natural Sciences as the Basis of the Social Sciences.

Professor MacCurdy: Paleolithic Environment in Europe.

Professor Bishop: Race Characteristics *vs.* Natural Environment in Commercial Success.

Professor Huntington: Climatic Influences in Human Activity.

Professor Bowman: The Physical Environment of the Machiganga Indians in Peru.

Dr. Clark Wissler: Culture and Environment.

A full interchange of views followed and considerable discussion of the specific questions raised.

On February 19, a second conference on the same subject was held at a meeting of the Yale Anthropology Club, and the following papers were offered:

Professor Boas: Arctic Conditions and Arctic Culture.

Dr. Goldenweiser: Theoretic considerations concerning the relation of culture and environment.

Dr. Spinden and Dr. Lowie: The Indians of the Southwest, and The Plains Indians, in relation to their environment.

The full views of both groups of men were thus submitted to the conference and there followed an enthusiastic and prolonged discussion of great value to all the members. Interest centered around the question of the degree to which geographic conditions either originated or guided cultural development. The geographic point of view is generally misapprehended, but discussion made it quite clear that the anthropologist and the geographer are, after all, well agreed as to fundamental principles. It was the general sense of the conference that geographic factors are of vital importance in human development, less as originators of cultural elements than as guiding forces after cultural elements have been "invented." The invention itself may be purely psychologic, though even here the environment may offer stimulating conditions. The conclusion that environment is static and culture dynamic in character aroused most discussion; the idea was finally accepted that a changing environment is established in the case of human migrations over tracts of diverse climate and relief. The conference closed with an able summary by Professor Boas, in which he emphasized the fundamental importance of geographic factors in the study of many phases of human development, in spite of the large number of cultural elements whose origins are either remotely related or wholly unrelated to physical surroundings.

ISAIAH BOWMAN.

PHYSICAL GEOGRAPHY

THE LABRADOR CURRENT AND TEMPERATURES. The British Meteorological Office has recently begun the publication of a series of *Geophysical Memoirs,* four numbers of which have been issued. As the title implies, these *Memoirs* are likely to be concerned with dynamical and physical meteorology, rather than with climatology. The first of the series, however, concerns a climatological subject fully as much as it does a more strictly meteorological one. Its title is "The Effect of the Labrador Current upon the Surface Temperature of the North Atlantic, and of the latter upon the Air Temperature and Pressure over the British Isles," and the author is Commander M. W. C. Hepworth. This particular volume has peculiar interest because of the *Titanic* disaster. The fact of greatest popular interest is the definite statement that the prevalence of ice in the Atlantic Ocean is not a cause of cold weather there, but is a symptomatic effect of the cold Labrador current. R. DEC. WARD.

FLUCTUATIONS IN THE TRADE WINDS. J. S. Dines has recently considered "Some Long-Period Fluctuations in the Trade Winds of the Atlantic" (*Quart. Journ. Roy. Met. Soc.,* Oct., 1912). The author has discussed the hourly wind observations at St. Helena from 1892 to 1910, and finds that they tend to confirm the hypothesis of a long-period oscillation. He has further discussed the data dealing with the trade winds at San Juan, Porto Rico, and finds that there is a certain similarity in the changes at the two stations, a backing of one wind

being accompanied by a veering of the other, while the St. Helena curve seems to be about one year in advance of the one at San Juan. There thus appears to be a distinct suggestion that the two variations are connected. R. DEC. WARD.

THE ORIGIN OF KAMES. Professor H. W. Ahlemann of the University of Stockholm, discussing the view that kame is a topographic rather than a genetic term, presents an analysis of his detailed studies in a small area of kames of such simplicity that he seems to have worked out their definite origin (Valle Härad, a Kame Area in Vestergötland, Sweden. *Zeitschr. für Gletscherk.*, Vol. 6, 1912, No. 3, pp. 197-211).

The area discussed, Valle Härad, is in southern Sweden, between Lakes Wener and Wetter. It forms a part of the large Fenno-Scanian terminal moraine, which marks one of the longest halts in the otherwise rapid recession of the continental glacier of the Scandinavian peninsula. The topographic map of the area, which includes only about 32 square miles, gives an impression of a chaos of hills and hollows. This, Ahlmann shows to be made up of three submarine deltas, a succession of eskers, several drumlins, and groups of knolls, ridges, and kettles due to deposition of glacial stream gravels and slumping of buried ice blocks. All of the surface formations of Valle Härad seem to have been formed either just inside or just outside the glacier margin, and the kame hills are specifically stated to be not of subglacial origin, but to be definitely related to original deposition and subsequent slumping in connection with glacio-fluviatile deposition on and about masses of stagnant ice.

LAWRENCE MARTIN.

OBITUARY

JEAN DUPUIS. This explorer, well known for his work in Tonkin, died at Monaco on Nov. 28, 1912, age 84 years. In the seventies of the last century his ascent of the Red River of Tonkin proved its availability as a route to Southwestern China. It was due to his explorations and studies that France was incited to adopt the policy which resulted in her predominant position in the Peninsula of Indo-China. Dupuis wrote "L'Ouverture du Fleuve Rouge au Commerce et les Evénements du Tong-kin, 1872-73," which was published in Paris in 1879 (Vol. 2, "Mémoirs de la Société académique Indo-Chinoise").

CAPTAIN HJALMAR JOHANSEN. This polar explorer, while insane, put an end to his life on Jan. 3 in Christiania at the age of forty-six years. He was a member of the first *Fram* expedition under Nansen, who, in March 1895, selected his as his companion on his journey over the ice towards the Pole, which led finally to the coast of Franz Josef Land, where they spent the winter, and retreating southward in the spring fortunately reached the headquarters of the Jackson-Harmsworth expedition at Cape Flora. His Government appointed him Captain in the army as a reward for his services. Later he was associated with the Prince of Monaco, Dr. Bruce and Major Isachsen in their North Atlantic and Spitzbergen explorations. He was a member of Amundsen's party in Antarctica, but did not take part in the South Pole Expedition.

GENERAL

THE XIITH INTERNATIONAL CONGRESS OF GEOLOGY. The meetings of the Congress will begin at Toronto on Thursday Aug. 7 instead of Aug. 21 as previously arranged, and will terminate on Thursday, Aug. 14. The headquarters will be at the University of Toronto. All inquiries regarding arrangements should be addressed to the Secretary, at the Victoria Memorial Museum Ottawa, Canada.

TWO MEDALS AWARDED TO PROFESSOR DAVIS. The Elisha Kane gold medal of the Geographical Society of Philadelphia was presented to Professor W. M. Davis on Jan. 28 and the Culver Medal of the Geographic Society of Chicago on Feb. 19.

WOMEN ADMITTED TO FELLOWSHIP IN THE ROYAL GEOGRAPHICAL SOCIETY. A special meeting of the Royal Geographical Society was held on Jan. 15 to consider the admission of women on the same terms as men to the Fellowship of the

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Society. In 1893 the members of the Society voted on this question and the proposal to admit women was defeated by 1,178 to 480. The sentiment of the Society has recently been tested by a much larger poll the vote being 2,189 to 678 in favor of the admission of women or a proportion of more than three to one. At the special meeting, Earl Curzon of Kedleston, President of the Society, moved "that the Society approves of the election of women as Fellows," and the voting was 130 for and 51 against it. The President declared the motion carried.

During the discussion Mr. Mitchell spoke strongly against the admission of women to Fellowship. He thought the effect of the invasion of the Society's premises by women would be that they would use the premises as a club house and wherever two or three women would gather together there would be argument. He foresaw difficulties and even scandals arising if the motion were carried. Mr. A. Holness voted for the admission of women in 1893, but said he had now grown older and wiser and his vote on this occasion would be cast against the women. He believed their presence would be a hindrance to scientific work. Captain Slack thought the ladies had better organize a geographical society of their own and Mr. Burgess believed that their admission to the Society would cause trouble. On the whole, however, the discussion was strongly in favor of admitting women to the Society.

AWARDS TO GEOGRAPHERS. Of the awards made from the Bonaparte Fund for 1912 by the Académie des Sciences of Paris, as announced in a recent number of *Nature* (No. 2255), the following pertain to geographic work: 3,000 francs each to MM. Gentil, Pallary, Pitard and Bouguil, members of the French scientific expedition to Morocco which will undertake geological, zoological, botanical and agronomical researches with a view to the future development of the country; 3,000 francs to Professors de Martonne, Brunhes and Chaix for assisting in the publication of their "Atlas Photographique des Formes du Relief Terrestre;" and 2,000 francs to Professor Gruvel of Bordeaux, Director of the Bureau of Fisheries of French West Africa, for the biological and oceanographical exploration of the Baie du Lévrier, the bay on the west coast of Africa enclosed by the prong of Cape Blanco in 21° N.

In this connection M. Gentil's recent fundamental paper on the geology of Morocco will be remembered (*Ann. de Géogr.*, Vol. 21, 1912 (March 15), pp. 130-158), and attention may be called to the late Professor Tarr's note on the Atlas Photographique des Formes de Relief Terrestre in the *Bulletin*, Vol. 44, 1912, pp. 94-97.

TRAINING COLLEGE STUDENTS IN FIELD WORK. The course in Geologic and physiographic Surveying under the auspices of the Department of Geology of Oberlin College, announced in the April 1912 number of the *Bulletin* (Vol. 44, p. 292), was given during the seven weeks, June 21-August 10 in Virginia, under the direction of Dr. George D. Hubbard, head of the department. Nine men and two women took part. Camp was established near Narrows, Va. A topographic map of the area was first prepared, then the geologic map, sections and diagrams were made. The economic resources were studied, a careful systematic collection of fossils from the entire section was made and the physiographic history of the region interpreted. Each student prepared a complete report covering all phases of the work in accordance with the plan of the geological folios of the U. S. Geological Survey.

The course is designed to train men desiring Survey positions in all field methods, and to give teachers a summer's practice in interpreting geologic, physiographic and geographical phenomena. Five members of the party were graduate students. A similar survey will be undertaken in the summer of 1913 in the same neighborhood.

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GEOGRAPHICAL LITERATURE AND MAPS

(INCLUDING ACCESSIONS TO THE LIBRARY)

BOOK REVIEWS AND NOTICES

(The size of books is given in inches to the nearest half inch.)

NORTH AMERICA

Discovery and Exploration of the Mississippi Valley, with the Original Narratives of Marquette, Allouez, Membré, Hennepin, and Anastase Douay. By John Gilmary Shea. 2nd edition. lxxx and 268 pp. Ill. With a facsimile of the newly-discovered map of Marquette, and of Marquette's Letter. Joseph McDonough, Albany, 1903. $5. 9½ x 7½.

Early Voyages Up and Down the Mississippi, by Cavelier, St. Cosme, Le Sueur, Gravier, and Guignas. With an Introduction, Notes, and an Index, by John Gilmary Shea. xi and 191 pp. Joseph McDonough, Albany, N. Y., 1902. $4. 9½ x 7½.

The first book was originally published in 1852. It is almost entirely historical in its point of view and it is made up largely of translations of the narratives of the early explorers of the Mississippi valley. The book opens with an historical account of the discoveries of the river and covers the records of the years between 1518 and 1699. This is followed by a chapter on the life of Father Marquette. Three-fourths of the book is given to a collection of the narratives of explorers beginning with Marquette in 1673 and ending with Douay's account of La Salle's attempt to ascend the river in 1687. The book preserves for us the early accounts of explorers in the interior of this country and presents in an accessible form the story of the original manuscripts.

The second book is a continuation of the history and although its title might easily imply that the same ground has in part been covered in this volume as in the first book, it really takes the story up directly at the close of the earlier work. This volume contains Cavelier's account of La Salle's voyage to the mouth of the river, St. Cosme's voyage down the river, in 1669, La Sueur's voyage up stream during 1699-1700, Gravier's voyage down and up in 1700 and Guignas's voyage up in 1727. The narratives are very brief and in the main are limited to the recital of the stages of the journey such as the passing of the various tributaries and meetings with the natives. Of these explorers, Gravier was the only one who seemed to have been interested in the river itself. His voyage down occurred during the low water stage and he reports many islands and shoals. He was impressed with the windings of the river and once he speaks of boxing the compass. Early in 1700, when he was near the mouth, the river was in flood and Gravier reports but few spots for more than eighty leagues not inundated. His interest may be accounted for by the implication which his letter warrants that he was asked to report on the available wealth of the land and the possibility, should the country be found rich in minerals, of using the river as a waterway. ROBERT M. BROWN.

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The Climate of Wisconsin and its Relation to Agriculture. By A. R. Whitson and O. E. Baker. 65 pp. *Bull. 223*, Agric. Exp. Sta., Univ. of Wisconsin. Madison, Wis., 1912.

It is a sign of the times that more and more attention is being paid to the economic aspects of climatology; that simple tabulations, however complete and accurate they may be, are being supplemented, and in some cases replaced by discussions of the larger relations which climates have to man. Very few persons can find a real live interest in "dry" climatic tabulations. Few can even find any real information in them. But as soon as a competent writer takes these tables, culls out from them the really essential things, put these essentials in brief and easily-remembered form, and then points out the economic bearings of these larger climatic characteristics, then his readers begin to see that climatic discussions really can be made interesting, and that the human aspects of climatology are full of importance in every-day life.

Messrs. Whitson and Baker have prepared a report on the climate of Wisconsin in relation to agriculture which gives the most important facts of climate and points out their relation to field crops, the dairy industry and fruit-growing. We hope other states will follow with similar reports. There are several charts and diagrams, but the isohyetal lines on the mean annual rainfall map are puzzling. R. DEC. WARD.

The Ships and Sailors of Old Salem. The Record of a Brilliant Era of American Achievement. By Ralph D. Paine. xv and 515 pp. Ills., index. A. C. McClurg & Co., Chicago, 1912. $2. 8½ x 6.

This is an historical account of the maritime commerce of Salem, Mass., from 1680 when shipping was in its infancy and the struggle for an existence by trading ended commonly in defeat, through the years when Salem was the foremost seaport of the United States from the standpoint of imports from foreign shores, to about 1870 when the city in the face of new conditions turned its back to the sea and became a manufacturing center.

Much of the book is detailed excerpts from the logs and journals of a number of masters who were preeminently the leaders among the host of captains who sailed from this port. Here may be found the story of the early commerce with the West Indies and the Barbary Coast, with the East Indies and Japan. The first voyage to Japan of an American ship, under contract with the Dutch East India Company is related at length and the vivid picture of the barriers erected by the Japanese people against foreign contamination before the visit of Commodore Perry's squadron in 1853 is instructive and interesting. The Salem ships sailed the seven seas; cargoes of marketable commodities were brought from distant lands; the privateer fought the pirate and the jealous foreign competitor; it was an age of adventure and romance. The author, who set himself the task of compiling a book from the old manuscripts to commemorate the skill and daring of the Yankee sailor, has succeeded admirably. ROBERT M. BROWN.

The Story of the Bronx, from the Purchase Made by the Dutch from the Indians in 1639 to the Present Day. By Stephen Jenkins. xix and 451 pp. Map, ills., index. G. P. Putnam's Sons, New York. 1912. $3.50. 9½ x 6½.

The interest of this narrative is imperfectly sustained. The result is patchy. In part, this defect is due to the absence of a well ordered plan in the study of the material; perhaps still more to the interlacing of two schemes of treatment which in themselves are scarcely to be coordinated. In the earlier and to some extent, in later chapters, the author has prosecuted his researches through the development of the waterways of the region as natural lines of communication, the beginning of the trail of the Indian, the lane of the early settler on his frontier farm, the postroad, the city street, becoming in

richest measure in the Bronx the parkway. It is not merely ornamental to hint that the Bronx has been an exposed frontier; it was at some inexactly determined spot within its present urban borders that the good Anne Hutchinson fell a victim to the savage marauder. Even in his generally satisfactory treatment of the waterways the author falls into slips of carelessness, as on page 177 where he confuses the Harlem with the East River. In the period after the Revolution he leaves the topographic method and studies development principally by means of the civic factor. Settlement is best studied in topography, confusion is the inevitable result of essaying the comprehension of the village and the town with neglect of the geographical essentials of the region out of which they grow. Yet, despite the defect of method in this part of the work the author has succeeded remarkably well in exhibiting the borough, particularly the region nearest the Sound, as a frontier of discordant settlement. His narrative makes plain the irritation caused by the invasion of Yankees from New England and their success in obtaining a foothold in Westchester, a species of provincial jealousy familiar in the works of Irving and Cooper. The work is abundantly illustrated, intelligently indexed for reference, and will serve an excellent end as the compendium of all the information as to Bronx settlement than can be desired by students of history. WILLIAM CHURCHILL.

The American Mediterranean. By Stephen Bonsal. xiv and 488 pp. Maps, ills., index. Moffat, Yard & Co , New York, 1912. $3. 8½ x 6.

This book is written almost wholly from the political and historical standpoint and it covers the important islands of the West Indies, the Spanish Main, Mexico and the Isthmus. The author hopes apparently to awaken a larger interest in these neighboring lands among the American people and he attempts to point out the potential advantages of many of the islands which will follow the opening of the canal. With an awakened interest must come at the same time a larger amount of concern because of the strange practices and incendiary motives which form the basis of the education of many of the dwellers of the islands. In the rough, the story of Alexis Nord, Castro and Diaz are known, but the author has written for us the background without which any judgment must be opinionated. Many Americans will read with surprise and likely with horror the accounts of voodooism as it is practiced at our gates. An important chapter of the book, "The Usufruct of the West Indies," estimates the commercial value of the sugar, bananas, cotton and cacao crops of the islands, and the author cites the German commercial growth among the West Indies as worthy of our study and rivalry. The value of the book for historical studies is increased by the inclusion of many state papers in the appendix. ROBERT M. BROWN.

SOUTH AMERICA

Through South America. By Harry Weston Van Dyke. With an introduction by John Barrett. xxiv and 446 pp. Map, ills., index. Thomas Y. Crowell Co., New York, 1912. $2. 8½ x 6.

A long historical sketch—nearly one-fourth of the entire volume—shows the author's appreciation of the interest which (for the people of the United States, at least—and at last) all parts of South America unquestionably possess. The course of stirring events in South American history is traced from the age of discovery to the battle of Ayacucho and the close of the struggle for the liberation of Spanish continental dependencies in the New World. Then follow chapters describing Brazil, Argentina, Uruguay, Paraguay, Bolivia, Chile, Peru, Ecuador, Colombia, Venezuela, and the Guianas. These descriptive chapters deal with topics so numerous—products, climate, topography, manners, customs, etc.—that it would be unfair to expect uniform merit in all of the views advanced. The book is pleasantly written and attractively illustrated. That premised, it becomes easier for us to admit that we have read with surprise, what is said in regard to the "Chileno" on page 314, and with astonishment what is said on page 351, about the healthfulness of Cuzco.

Guiana: British, Dutch, and French. By James Rodway. 308 pp. Map, ills., index. Charles Scribner's Sons, New York, 1912. 9 x 6.

This is one of the latest additions to the well-known South American Series. The story of Guiana, we are told "is one of colonization under very great difficulties, of trading ventures, failures through ignorance—and labor experiments." This statement suggests the main themes of the book, for nearly half the text is historical, dealing mainly with English activities, and British Guiana, but discussing Dutch and French activities in their respective sections of the country. Chapters are also given to: villages and river people in British Guiana, the people and immigration, native Indians, census and mortality of different races, fauna and flora, agricultural and natural products, travel notes, and trade. There is also a bibliography and a map.

Two things stand out sharply: (1) The arraignment of the French policy in Cayenne; and, (2) the discussion of labor problems, which comes to the front at almost every turn.

Cayenne is called a "blot on Guiana" and "deserves everything that has been said against it." Cayenne and alcoholism—"for no doubt stimulants have killed more white men than the climate"—are held responsible for the bad name of Guiana. This evil reputation is "no longer deserved." Even Cayenne is "no more unhealthful than other tropical colonies," but suffers from the evil effects of the convict system which "stands in the way of progress." French Guiana will not attract settlers, capital, or become a valuable colony until this system is changed.

The labor problem is the most interesting topic in the book. We are told: "The white man cannot labor in the field—he can only direct and control." "If there is a dense native population something may be done." "Tropical countries can only be developed by tropical races." "On the amount of imported labor has always depended the prosperity of Guiana." Thus, British Guiana has been most important because it has the largest labor supply of the three Guianas. Following 1796, increased slave trade caused increased exports, while abolition of the slave trade in 1807 seriously checked development, and the abolition of slavery in 1834 nearly ruined the colony. In the year of abolition, exports were: sugar, 45,000 tons; cotton, 5,319 bales; coffee, 1,640 tons. Eleven years later, exports were: sugar, 19,000 tons; cotton, none; coffee, 51 tons. Later coffee also dropped from the list, and has only recently reappeared.

The importation of Indian coolies has saved the day, and given the best labor yet found. The Indian coolie is "fast becoming the backbone of British Guiana" and "certainly will be the man of the future" if the immigration system is continued. He is "more reliable than the negro," can be depended on for five days work per week and enjoys better health than " the other races," probably because he is "the only real tropical man who dresses to suit the climate."

These items suggest the general tone of the book, which is decidely interesting in every way. The only serious criticism which may be ventured is that the author says two little about Dutch and French Guiana, with which he is personally better acquainted than this book shows. WALTER S. TOWER.

AFRICA

L'Afrique Occidentale Française. Par Louis Sonolet. 2ème édition. 246 pp. Map, ills. Hachette et Cie., Paris, 1912. 7½ x 5.

A French view of territorial and colonial expansion generally emphasizes the fact that her territorial ambitions have not been blazoned by many wars but that her policy is one of pacific penetration. This account of French West Africa is valuable then as an amplification of the French idea of colonization, and at the same time there can be gained from it a good conception of the present stage of the country. The tools of her labor are the natives; and the

French from the beginning have instructed them in the arts of military and administrative organization, sanitation, commerce and industry. A chapter on railroads gives much information concerning the various lines, constructed and proposed. The author reverses the general saying that colonies are made for commerce and expounds the commercial and industrial development of the French possessions from the standpoint of commerce as a necessity for the colonies. Agriculture, grazing, hunting and fishing as occupations in this land are considered in detail. The book ends with a description of the native population, principally to make clear the general characteristics of the indigenous society in their bearings on the French colonial policy.

ROBERT M. BROWN.

L'Afrique équatoriale française. Par Maurice Rondet-Saint. iv and 312 pp. Map. Plon-Nourrit et Cie., Paris, 1911. Frs. 3.50. 7½ x 4½.

After the renown, which the author acquired through two preceding works, of which one was crowned by the Academy, this sketchy disposition of the future of the African colonies of France is disappointing. He has made all too scant use of his studies in Gaboon itself. His recommendations seem trivial when measured by the pressing need of the metropolis to develop colonies and equally when measured by the tragedy which now saddens French colonial life. Is Gaboon to be a great and a productive empire, or is it going to drain France of its resources and destroy the African peoples whom the French have undertaken to civilize? With that question coming foremost it is irksome to find that any man who has visited that coast and its rearward territories stops at the threshold to debate the preferability of shipping non-commissioned officers steerage or second class. Not many Frenchmen go to the Congo, few indeed outside the army of functionaries of the government and clerks of trading companies. Surely the stay-at-home Frenchman is entitled to hear a voice speaking with true information about this land, which may be an empire or may be a cemetery, he knows not as yet which. Instead of grave consideration of the burden which France has assumed, he finds here the recommendation that Africa will not really pay until Thomas Cook has exploited it for the tourist trade, until the motor clubs have established petrol stations along the Congo from Banana to Equatorville, until the Société Cynégétique has attracted the big game hunters away from British and German East Africa, until French yachtsmen forsake Cowes and Kiel for the long cruise to Dakar. It is surprising that any observer could have traversed this territory with so scant regard of the great drama which is there and now in action.

WILLIAM CHURCHILL.

A Colony in the Making; or, Sport and Profit in British East Africa. By Lord Cranworth. xiv and 359 pp. Map, ills., index. Macmillan Co., New York, 1912. $4. 0 x 6.

A critical survey of British East Africa as to its economic prospects, conditions favorable to development and drawbacks, such as distance from Europe and the nearly complete absence of minerals. Facts relating to these topics fill two-thirds of the book; the balance is devoted to game, with emphasis on the nature and habits of the animals. The chief economic assets are found in the wide-spread highlands covering large areas from 4,000 to 8,500 feet above the sea. The climate of the highlands is unsurpassed. The soil is rich, abundant and waiting only to be tilled. No better grazing can be found. The rivers are abundant and many of them clear and beautiful. The forests are almost unsurpassed in Africa. Labor in the Protectorate is plentiful and intelligent.

The only important mineral resouce is the crystalline soda in Lake Magadi, sixty miles southwest of Nairobi, the finest known soda lake in the world. A branch railroad is being constructed to it, and a large company has been organized to work the field. The lake contains over 200 million tons of soda of extraordinary purity.

The Uganda Railroad has exceeded the most sanguine expectations. The balance sheet for 1903-04 showed a deficit of over $300,000; the deficit was decreased in the following year to $15,000. In the succeeding year the receipts exceeded expenditures by $200,000, and in the year 1910-11 by $369,000.

Capital is flowing in and exports are flowing out. The most important and proved lines of farm products are: permanent crops—timber, sisal hemp, coffee, wattle (for tannin extract), fruit; seasonal crops—wheat, beans, maize, barley, oats, linseed, potatoes, tobacco, ground-nuts (pea-nuts), chillies; live stock—horses, cattle, sheep, pigs, ostriches. The book is by a man of long and unsurpassed opportunities for observation, who tries to give nothing but the facts and a helpful discussion of them. No better book has yet been written on this remarkable part of Africa. A chapter "Hints for Woman in British East Africa," by Lady Cranworth, is included.

Aux Sources du Nil par le Chemin de Fer de l'Ouganda. Par Jules Leclercq. v and 295 pp. Map, ills. Plon-Nourrit et Cie., Paris, 1913. 7½ x 5.

The author has revealed his descriptive talent once again in this narrative of his trip over the Uganda R. R., and beyond into Uganda territory. Along with descriptions such as how the locomotive's whistle is often sounded to frighten rhinoceroses off the track, he conveys information of a geographical character. From Mombasa through Nairobi and the Rift to the shores of Lake Victoria the reader is led through a country which, before the time of Joseph Thomson (1882-1883), was one of the blackest patches on the Dark Continent. A splendid impression of British colonial efficiency dawns on the mind as scenes witnessed on British governed territory are evoked by the writer's facile pen. Much of the book's interest lies in the descriptions of negro customs and traits.

LEON DOMINIAN.

The Ancient Egyptians and Their Influence upon the Civilization of Europe. By G. Elliot Smith. xvi and 188 pp. Maps, index. Harper & Brothers, New York, 1911. 7 x 4½.

A mere primer in general appearance this small volume sheds a very bright light upon one of the great obscurities which have darkened the life of early man in Europe. Dr. Smith starts with a brilliant review of the recent discoveries of the man of Predynastic Egypt, whom through a remarkable chance it has been possible to study in actual flesh even to so minute a detail as the last meal which each had taken millenniums ago. He sets them forth as the discoverers of copper. From the valley of the Nile he sends them along the African shore of the Mediterranean with ferries to Malta, to Pantellaria, to Sicily and to Spain, introducing the megalithic culture which has left such abundant remains along the littoral of Europe between Gibraltar and Scandinavia. In the other direction he points out that in Syria the ancient Egyptians introduced their gift of metal to the Armenoid races which thus were able to sweep westward north of the Mediterranean introducing the so-called Aryan culture of the bronze age upon the earlier neolithic inhabitants. These two theories may not meet with immediate acceptance. They may in time be wholly supplanted by others dealing with the same material; but they certainly for the present clear up many of the obscurities which have long hung over the field upon which they are particularly directed. Apart from this enticing region of polemics the volume is filled with much fresh information upon the Proto-Egyptians which will be found most agreeable reading.

WILLIAM CHURCHILL.

The Oxyrhynchus Papyri. Part 9. Edited, with translations and notes, by Arthur S. Hunt. x and 304 pp. Ills., index. Egypt Exploration Fund, London, 1912. 10½ x 8.

This is the ninth volume of these treasures of a dust heap, a volume of particular importance since it contains new fragments of Sophocles and of the

life of Euripides by Satyrus. Of course such literary discoveries bring the greater glory to the Egypt Exploration Fund under whose direction the research has been conducted, but, as in the case of the earlier volumes, we feel that the greatest value in all this discovery lies in the unearthing of official and private papers which disclose the life of this settlement of Greeks under Roman rule in Egypt. We are dealing with the indiscriminate contents of ancient waste-baskets, shot pellmell with other rubbish. The pen marks upon each scrap of papyrus, gives us tantalizing glimpses of life, yet each fragment may lead to richer comprehension of life in ancient undress. It is well to have the best product of the tragic muse, as in these fragments of the "Ichneutae" and "Eurypylus," but it is better to know what manner of folk crowded to the theatres to see the great dramas and to hear the words bellowed through sonorous brass. In this group of papyri, we have the reports of officials, civil and military, the recruiting of soldiers, the movement of commissariat, the payment of taxes and the varied schemes then in vogue whereby they might be sworn off. There are deeds conveying real property and human property in slaves, all showing that the lawyers and the scriveners had invented a dialect of rigid formalism. There are family letters, the home gossip, spelling and grammar disregarded in haste and the bad pen quite as now; Didymus writes to Chaeremon, his father, and about all that he can find to say is, "there is nothing unpleasant at your house. My mother went to a funeral." This is a most interesting group of memorials out of the past. One cannot too highly praise the zeal in their discovery and the skill and industry wherewith these scrapes of ancient pens have been deciphered and recorded. As usual in this series a number of the larger fragments are reproduced in facsimile.

WILLIAM CHURCHILL.

The Last Frontier. The White Man's War for Civilization in Africa. By E. Alexander Powell. xv and 291 pp. Map, ills., index. Charles Scribner's Sons, New York, 1912. $3. 9 x 6.

This book is the story of the European colonies in Africa. It can be commended as a brief summary of the African question to-day, for, in a small space, a great deal of information as well as opinion has been collected. The chapters are written in a fresh and attractive style and the author has selected many incidents which portray for the reader definite and vivid pictures. Beginning with the French colonies of the Northwest, then Tripolitania, followed in turn by Egypt, Zanzibar, German East Africa, Cape Colony and Rhodesia, the reader is conducted into the midst of the problems which beset the European colonizers. A side trip to the island of Napoleon's exile ends the book. While, as might be expected, the main theme of the book centers around politics and diplomacy, especially in the case of Morocco and Tripolitania, there are many items concerning the various colonies such as their conditions under the control of unfavorable physical environment and their promise of development, which are based on information gained by the author in his travels and which give a good picture of the land and the people. Especially is this true of the chapter on Zanzibar and Cape Colony. Of the many fine pictures, the photographs, of the sandstorm passing over Khartum and sunrise on the great sands (Sahara), are especially impressive.

ROBERT M. BROWN.

Crociera del Corsaro alle Isole Madera e Canarie. Narrata dal Cap. E. A. d'Albertis. vi and 336 pp. Map, ills. G. B. Paravia e Comp., Torino, 1912. 5 lire. 9½ x 6½.

Captain d'Albertis is an Italian, but first of all a Genoese. Justly proud of the early seafaring deeds of his people, he dwells with delight on the bold excursions performed in search of the Atlantic unknown. Thus he claims for the Genoese the discovery of Madeira and Porto Santo, and places the knowledge which they had of these isles in the 14th century, according to a "Portolano" from 1351. He also recalls that, after the voyages attributed to the Phoenicians,

and Iberians anterior to our era, and the Arabians subsequently, a Genoese expedition rediscovered the Canaries. His historical indications are not devoid of interest. They show how honestly Captain d'Albertis has prepared himself for his cruise by becoming acquainted beforehand with the literature on the islands he was to visit. His course was first directed to Madeira, and the descriptions of the voyage, as well as subsequent chapters, recall somewhat the "Souvenirs d'un Naturaliste" by A. de Quatrefages, also partly the "Cruise of the Betsey" of Hugh Miller. The main object was collecting specimens of animals and plants, also ethnological and archæological objects, for the museum of his native city. From the Appendix we learn that many new species rewarded his efforts. Among the specimens secured is to be noted, as caught in the bay of Funchal (Madeira) a so-called "devilfish" *(Dicerobatis Giornae)* thirteen feet broad. It is to be deplored that the illustration accompanying the description of its capture is not a photograph, but a sketch, and it is singular that the Captain has illustrated his book only with woodcuts, though he had photographic instruments aboard.

The cruise of his yacht was first directed to Madeira. A lucid description of that island enables the reader to see it as in a cinematograph. Vegetation there, as well as subsequently in the Canaries, is not only described with great care, but the vicissitudes of alimentary plants imported thither by Europeans, the epidemics devastating the vine, and latterly the chestnut, for example, are referred to in a very instructive manner; and geology is, everywhere, referred to substantially, in its connection with climate, organic life and the career of man. The book is a charming adaptation of science to travel popularly and entertainingly related.

He naturally dwelt longest on the Canary Islands, where he ascended the peak of Teneriffe. In connection with these islands he deplores, with a generous heart, the fate of their primitive inhabitants, the Gaunches, who, while officially exterminated, he still manages to find in very numerous survivals that present a blending of type through intermarriage with Spaniards. His impression of these partly cave-dwelling aborigines from the period of stone-implements is exceedingly favorable. According to him, they were a specially handsome and noble race. Distance in time, perhaps lends enchantment to the view.

Captain d'Albertis, in the course of his disquisitions on the Madeira group and the Canaries, devotes considerable space to Atlantis. While leaning to the opinion that this legendary island was the remnant of a mainland which once occupied a large part of the present ocean between Africa, southern Europe and America, and finding abundant indications of it also in antiquities from both the eastern and western hemispheres, he does not at all insist that such indications are positive proof. He even fully admits that the Atlantis tale requires much more data yet to become admissable. His knowledge of American archæology and ethnology is somewhat "archaic." The tentative map of Atlantis must be regarded as only suggestive. Interesting are his remarks about a supposed former terrestrial connection between Europe and Africa, across the Mediterranean.

The book is handsomely written and its author excels in poetic, even in florid descriptions of scenery and of natural phenomena. Plasticity and actuality abound in what he says of Madeira, the Canary Islands and especially in his picture of the tempestuous days spent in the Mediterranean after his sailing craft left the Spanish coast. AD. F. BANDELIER.

AUSTRALASIA AND OCEANIA

Results of Rainfall Observations made in Victoria during 1840–1910, including all Available Annual Rainfall Totals from 1,114 Stations, together with Maps and Diagrams. Published . . . under Direction of H. A. Hunt. Commonwealth Bur. of Met. xxxviii and 55 pp. Maps. Melbourne, 1912.

Some of the older meteorological services will have to look to their laurels

if the new Australian Commonwealth Bureau of Meteorology is not to outstrip them. We have, in this volume, a concise history of the rainfall of Victoria since records have been taken. This is the first publication to embody such information under one cover. Tabulations are given of all available annual totals and number of days for 1114 stations, many of the records going back to 1875 and earlier. Annual rainfall maps for each year from 1878 to 1910 have been included, in order to make the work complete for reference and comparison. An "authentic average rainfall map" is also included, as is a diagram showing the annual variation of rainfall of the whole state from the mean, and a map giving the average rainfall for the wheat-growing period. This makes, altogether, a very complete and welcome report on the rainfall of an important district. R. DEC. WARD.

EUROPE

How to See Italy by Rail. By Douglas Sladen. xxvi and 566 pp. Map, ills., index. James Pott & Co., New York, 1912. $3. 8½ x 5½.

The library of books on Italy is a large one, and the tourist who includes in his itinerary a smattering of many things in western Europe must be confused when he attempts to prepare himself for a brief journey across Italy. The guide which one needs must be like this book, not burdensome with details, but comprehensive, pointing out with a sure hand the most salient features along the route and imbued with enthusiasm. This book is not a Baedeker, but it is a book which will supplement the Baedeker as no other book can. It is more than a guide book, for besides the discrimination which it shows, the book adds the boon of inspiration, for the writer loves his Italy, without which the visitor to this sunny land travels in vain.

The book opens with a number of chapters which rehearse the charm of Italy—the charm of scenery, of architecture, of painting and of sculpture. This is followed by an account of railroad routes. All of this is general and covers Italy as a whole; but the bulk of the book is filled with directions related to all the provinces of Italy except four, as Lombardy, Venice and its people, Genoa and its Riviera and so on to Sicily. The last part of the book is a listed guide to galleries, churches, painters, sculptors, monuments, Sicilian and Roman sights and hotels.

The whole is conveniently arranged and the book is written with the belief that "Italy is the finest holiday ground in the world." The author is generous with his photographs which are excellent in quality and in the subjects. A number of small maps would have added to the value of the book.

ROBERT M. BROWN.

Italy in the Thirteenth Century. By Henry Dwight Sedgwick. Vol. 1: x and 440 pp. Map, ills. Vol. 2: 395 pp. Ills., index. Houghton Mifflin Co., New York, 1912. $5. 2 vols. 8½ x 6 each.

It is greatly to be regretted that Mr. Sedgwick did not think it advisable to coordinate this work of brilliant scholarship upon a base of the geography of northern Italy and the northern half of the peninsula with which his research has busied itself. The period of his loosely connected chapters was the very flower of a culture than which there was none so fair in Christendom, yet it was soon to sink into decay and pettiness until the coming of the New Learning should bring the world a new age. The theatre on which were played the dramas of the petty sovereignties is, above all others, dependent upon the means of communication and these in turn upon the geographic structure of the land, its streams and its mountain masses. The chapters in these two volumes are scarcely continuous, they become disconnected essays; yet with a proper consideration of the underlying geography it would have been possible to show that the rise of this city to power and the decadence of that other, that the growth now of Medici and now of Malatesta, all fit into an harmonious whole under the governance of natural law. The work, however,

as an intimate historical study and will be invaluable for students of Dante. The "Divine Comedy" bristles with personalities of life and politics which it calls for research to comprehend. Much of that work has been wrought out with pleasant grace in these two volumes and will prove far more entertaining and valuable for instruction in this graceful form than if presented under the mechanical and other limitations of a commentary on the text.

WILLIAM CHURCHILL.

ANTHROPOGEOGRAPHY

Les Produits Coloniaux. Origine, Production, Commerce. Par G. Capus et D. Bois. xvi and 687 pp. Maps, ills., index. Armand Colin, Paris, 1912. Fr. 7. 7½ x 5.

The colonies of France are so thinly sown about the world in its tropical and subtropical regions that this volume might very properly show in its title what it is in fact, an agronomic encyclopedia of the warm zone. From the very nature of things this work must find its largest bulk in vegetable products. The animal and mineral industries of the tropics occupy no commanding position in the economics of life between Cancer and Capricorn. Such, however, as have been at all exploited will here be found satisfactorily treated; we note in passing a report upon edible bird's nests which elsewhere it would be difficult to find. The character of the information recorded is essentially practical and economic. There is little technical information, but the lack is more than made up by directions for cultivating and for marketing the product. The illustrations are uniformly valuable and for the most part they appear to have been made expressly for this work. But the index is disappointing; for a single instance, we may cite the crosne excellently pictured on page 105; neither under that nor its systematic name of Stachys, does the index so much as mention it.

WILLIAM CHURCHILL.

Le Sol et l'État. (Géographie Sociale.) Par Camille Vallaux. xii and 420 pp. Maps, index. Octave Doin et Fils., Paris, 1911. Fr. 5. 7½ x 5.

There are many interesting things in the book, but they lack coherence. Here is a sort of geography that is only *disjecta membra*. In the first place, the work will appear to most geographers highly metaphysical. The very style is involved beyond French precedents. Sentences may be found quite half a page in length. A good part of the work looks for geographic causation or control in the formation of states with the net result of doubting that there is any such control. Then a positive principle is found which the author calls differentiation. States, it seems, arise at points of strong physical contrast or transition. The present writer does not find the idea clear or definite. The most glaring inconsistency is the argument showing why India has never been able to originate a strong, unified, autochthonous state. It is because, we are told, the people of India live almost wholly in the least differentiated parts of the country. We are not told why the differentiated regions that ought to beget states are in India avoided by men, but we cannot help wondering whether the *people* themselves may not have something to do with it. Vallaux's whole work appears to neglect reactions of man to nature's actions. Sugar is one thing to alcohol, another to sulphuric acid and yet another to water. So the forest of Northern Europe was one thing to the men of the stone age, another to the early men of the iron age and another to the men of to-day.

Ratzel is defended for regarding lines of communication as largely political rather than economic, as the "ordinary view" holds. Among the arguments in support, we find the suggestion that we should not look at modern systems of roads, but old Roman road-systems rather. Then we shall easily see the dominance of politics. Of course, if we select a period when policy was the only motive possible. In that way one may prove anything. For the author's style, take his final summary of the notion of the geography of the state. "C'est

la notion d'une *différenciation sans cesse élarge,* qui ne nie point la dépendance de la société politique à l'égard du sol, mais qui à côté de *l'adaptation passive* et du déterminisme naturel, reconnaît la part légitime de *l'adaptation active* et du déterminisme social." MARK JEFFERSON.

PHYSICAL GEOGRAPHY

Neue Grundlagen der Meteorologie. Von Paul Hoitsy. 107 pp. Maps. Franklin-Verein, Budapest, 1911. Mk. 2. 10 x 7.

The author has well named his book. The *Grundlagen* are not only new, but most meteorologists will consider them unsafe. When the sun and moon are in certain special relations to one another, and to the earth, there results (so says the author) an effect upon pressure distribution on the earth's surface, which, in turn, controls weather. The peculiar astronomical combination can be predicted in advance. Hence long-range forecasts are possible. The critical dates for the year 1912 are given in an appendix. The author expresses his disbelief in the old superstitions which have to do with the relations between the moon's phases, and the moon's attraction, and the weather. His studies have led him too in a new direction in which he believes meteorology can make rapid advance. He gives no law governing the development of weather in general, but considers that certain cyclones and anticyclones, of a special origin, which appear at certain critical times, are controlled by this combination of solar and lunar influences. These special pressures and weather conditions repeat themselves with such regularity that even exceptions do not occur. The author modestly says that, although unable himself to establish the general laws of weather sequence, he has indicated the way for others to follow.

R. DEC. WARD.

Grandeur et Figure de la Terre. Par J. B. J. Delambre. Ouvrage augmenté de notes, de cartes et publié par les soins de G. Bigourdan. viii and 401 pp. Gauthier-Villars, Paris, 1912. 15 frs. 10 x 6½.

We have one of Delambre's two posthumous works in this account of the first attempt to determine the size of the earth by actual measurement. Bigourdan's careful revision of the original sees light opportunely in the wake of his countrymen's labors in Ecuador and Peru. He has amplified Delambre's manuscript, the additions or alterations having been placed in brackets or parentheses. The original character of the work has been preserved neverthless so that a technical version of the first arc measurements is laid before the reader's eyes. Beginning with the first determination of the French meridian and an arc of a great circle in Lapland, the account of degree measurements made after 1800 is set forth in Delambre's wonted style.

The unfinished condition of the original is felt despite Bigourdan's ably prosecuted task. He cannot be blamed for omissions arising from this source. His thoroughness is exemplified by the insertion of maps which Delambre had altogether failed to provide.

The work possesses historical value which is bound to strike the attention of geographers interested in the growth of modern methods of determining the diameter of the earth. LEON DOMINIAN.

BIOGRAPHY

Michael Heilprin and His Sons. A Biography. By Gustav Pollak. xv and 540 pp. Ills. Dodd, Mead & Co., New York, 1912. $3.50. 9 x 6½.

To those who knew the Heilprins, this volume will serve as a memorial wholly worthy of the subject, a great father and two sons who left their mark upon their time. Yet, that is but narrowing the value of such a work as this. When sciolism is so well placed, when education seems so obscured in the rush for degrees and yet more degrees and the examination paper is the

end of study, it is well to study the lives of such men as these. Not one of them had been put through the educational mill, yet each was a man of the widest culture, three scholars without degrees and without examinations. It would be well for the generation which is now scampering through the forms of education to pause for the reading of this sympathetic record. In some fashion equally without the advantage or the hindrance of curriculum, this father and two sons had learned the necessity of accuracy. It was the essential condition of all they knew, and the width of their knowledge was great. Whether the thought turns upon Michael studying the earlier canon of the Scriptures with a vision given to but few, or to Angelo in the shock of Pelée bursting under his feet, or to Louis in his blindness toiling over encyclopedias, the one thing seen is the passion to be right and to be content with nothing less than accuracy. It is a good lesson to learn. This biography of three teaches that lesson forcefully. There are structural defects in the volume, the literary critic will see them at once; but the very things which are thus artlessly out of the classical scheme of biographical writing will but serve to make this intimate record of thinking men told in the expression of their thoughts all the better memorial to be treasured by those to whom the men meant familiar personalities. WILLIAM CHURCHILL.

EDUCATIONAL GEOGRAPHY

A Geography of the World. By B. C. Wallis. xvi and 369 pp. Maps, ills., index. Maçmillan Co., New York, 1911. 90 cents. 7½ x 5.

In this text-book the author says that he has laid especial emphasis upon the quantitative measurements and expression of the facts as to the geographical conditions under which man lives and works determined in relation to the world as a unit. Due to this method there is an unusually large amount of tables, graphs and other statistical matter. The book is divided into two parts. Part I deals with the world in general. It considers the great rivers, deserts, and other physiographic units of the world, as well as the peoples, animals, vegetables, and industries. The physiographic influence on the organic inhabitants of the earth is taken up in each instance as far as space will permit. Part II comprises a study of each of the continents in detail, the inorganic control and its organic response being again taken up briefly for each organic element. W. J. BURROUGHS.

Dent's Historical and Economic Geographies. By Horace Piggott and Robert J. Finch. Book 1: World Studies. xxiii and 390 pp. Maps, ills. J. M. Dent & Sons, Ltd., London, 1912. 3s. 6d. 7½ x 5¼.

The first of a series of six geographical text-books, intended primarily to be introductory to the rest of the series. It may, however, be used independently if so desired. The subject matter is developed according to the historical sequence of events. Starting with simple astronomy and geology, a condensed survey of these subjects being given, the authors take up the history of prehistoric and primitive man; climate and its relation to the organic inhabitants of the earth; the history of geographic exploration and discovery; maps and map-making; and lastly, some of the economic aspects and principles of geography. Each of the topics touched upon are illustrated with numerous photographs, maps, and diagrams. W. J. BURROUGHS.

High School Geography. Part III: Regional Geography. By Charles R. Dryer. Bound with Parts I and II, to make 536 pages. American Book Co. 1912. $1.30. 8 x 7½.

Parts I and II appeared last spring and were reviewed in this bulletin in May, 1912. Part III deals wholly with regional geography. Prof. Dryer divides the earth into five great climatic provinces. These he calls (1) intertropical provinces, (2) sub-tropical and warm temperate provinces, (3) temperate and intemperate provinces, (4) cold temperate provinces, and (5) polar provinces.

These are still further divided and classified under 14 types of climate. For example, the warm temperate provinces are classified under the headings: Arizonan type, Californian type, Plata type, Floridan type. Under Arizonan type, for example, he includes Arizona, the Sahara, the arid part of Peru, the Kalahari, and Central Australia.

Necessarily the boundary lines between both the main climatic provinces and the sub-provinces are somewhat arbitrarily drawn, and differences of opinion would arise regarding the placing of the boundary lines and possibly regarding the naming and classification of the climatic types selected. There are inherent difficulties connected with writing a regional geography in the limited space imposed by a high school text-book. It is doubtful if any system of natural divisions, either climatic or physiographic, could be adopted which would be thoroughly satisfactory. Perhaps Prof. Dryer's plan is as good as any. Half-tones are sparingly used, but black and white maps appear on nearly every page and they are thoroughly useful, unquestionably more useful than mere pictures. One excellent feature of the book is the emphasis which the author places upon the life of the people in the various parts of the world, and the influence of geographical environment upon the people. Some of the illustrative paragraphs in small type are exceedingly interesting and are sure to impress the principles which they illustrate.

On the whole, the book is a most encouraging beginning in the new field of regional geography for high school students, and we predict for it a wide use. R. H. WHITBECK.

A Class Book of Practical Geography. By Ernest Young and J. Fairgrieve. vii and 160 pp. Maps, ills. George Philip & Son, Ltd., London, 1911. 1s. 6d. 7½ x 5.

The one-hundred and eighty-seven exercises of this book are divided into three general classes; forty-five are given to climate, fifty-two to the shape of the earth and the remaining ninety to maps and map making. Temperature, thermometers, isotherms, marine influences, altitude, slopes, ocean currents, pressure, winds, rain, the weather map and local climate are the main topics treated under climate. Part II includes exercises upon the shape of the earth, latitude and longitude, direction, length of day, day and night, the seasons and longitude and time. Part III includes chain, prismatic compass, and plane table surveying, map projections, representation of heights, measurements of heights and exercises on ordnance maps.

Brief explanations precede most of the topics but they are hardly so comprehensive that a textbook may be dispensed with. Test questions taken from various public examinations follow the topics. The book differs from current American manuals in its emphasis upon instrumental surveying and map-making and its total absence of physiographic exercises. F. V. EMERSON.

Blackie's Elementary Regional and Practical Geographies. By David Frew. The British Isles, 80 pp., 6d.; British Empire Over Seas, 96 pp., 8d.; England, 96 pp., 7½ x 5½, 8d.; Europe, 80 pp., 6d. Blackie & Son, London, 1911. Maps in each. 7 x 5 each.

Each region in the series is treated under the heads: Position, build (structure), surface, drainage, climate, people, productions and soils, commerce and manufactures. This admirable plan is carried out rather faithfully but so much material is included that the books are rather encyclopedic in character. A commendable feature is the attempt to explain people and towns with respect to their geographic environment. The volume on England covers less ground and is therefore by far the most satisfactory. Maps and diagrams are freely used and in general they well illustrate their topics although some are poorly drawn and lettered.

The large number of facts, although plainly stated, throws upon the teacher a heavy burden of elimination and selection, for it is scarcely conceivable that the average child can remember, much less assimilate, all of them. The present tendency in American school geography is toward the

selection and emphasis of vital facts and books of this type would not be useful except for the teacher. As reference books where important facts can be easily and quickly found these books will be very useful.

F. V. EMERSON.

Geography by Grades. By Harmon B. Niver and Edward D. Farrell. Grade 5A: North America, United States, vi and 146 pp.; 5B: United States, vi and 122 pp.; 6A. Canada, Newfoundland, Mexico, West Indies, Central America, South America, 163 pp.; 6B: Europe, 180 pp.: North America, United States and its Dependencies, 305 pp.; 7B: Asia, Africa, Australia and Oceania, 242 pp., index. Maps, ills. and appendices in each. Hinds, Noble & Eldredge, New York, 1911. 8 x 6.

Volume 5A gives a brief account of the several states including surface and climate, products and industries, cities, and history and distinguished citizens. Volume 5B treats the states in the usual groups, the North Atlantic, South Atlantic, etc. Following this are interesting brief studies of the following somewhat typical states: Massachusetts, a manufacturing state; Pennsylvania, a coal state; Virginia, a tobacco state; Louisiana, a sugar state; Mississippi, a cotton state; Illinois, a prairie state; Minnesota, a wheat state; Colorado, a mining state; California, a fruit state. Canada and South America in Volume 6A and Europe in Volume 6B, are treated in the same general fashion as in Volume 5A. The illustrations are fairly well chosen, but it seems of doubtful value to include the state houses of each state since, if for no other reason, they are largely built on the same plan. Volume 7A treats North America and the United States more extensively. About one-third is given to chapters on industries, cities, products and commerce and the remainder to descriptions of individual states. Volume 7B treats of Asia, Africa and Oceania.

The dominant treatment in this series is factual and economic. Explanatory treatment is found but to a small extent on the economic, and scarcely at all on the physiographic side. Thus the supremacy of Pennsylvania in iron production is explained by the meeting of the Lake Superior ore with the cheap coal of that state. On the other hand, the commerce and manufactures of New York City are described, but the great westward gateway through the Mohawk Gap, the factor which explains the predominance of the city, is unmentioned. Statistics are quoted as to the manufacture of flour in Minneapolis, but there is no word of the importance of the water power at the Falls of St. Anthony.

The content of geography in elementary schools cannot be said to be fixed. Whether it will be factual with emphasis on location as of old or with emphasis on the commercial side or will include both with emphasis on relations, remains to be seen. This series of books is a well worked out contribution to a moderately commercial treatment of geography.

F. V. EMERSON.

The Elements of Geography. By Rollin D. Salisbury, Harlan H. Barrows and Walter S. Tower. ix and 616 pp. Maps, ills., index. Henry Holt & Co., New York, 1912. $1.50. .8 x 5½.

This is the second of the new type of geographies to appear. The book is a distinct departure from anything that has thus far been written in America. Of its twenty-one chapters covering about six hundred pages, only three chapters are devoted to physiography of the lands. Strictly speaking, only Chapter 3 deals with physiography of the lands, Chapter 1 being entitled The Nature of Geography, and Chapter 2, Earth Relations. Other chapters, however, include more or less physiography. Climate is treated with unusual fullness, receiving eight chapters or nearly 175 pages. Unquestionably, climate and its influences are entitled to a rather large proportion of space in a textbook of geography. Careful reading of these chapters, however, leaves the impression that details are introduced which tend to make the subject-

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matter more like reference than textbook material. The oceans receive a single chapter. Soils and their qualities are well treated. A chapter also is given to the internal forces which change the earth's surface, and another to modification of the land by external agencies. The foregoing chapters constitute fifteen out of twenty-one, and are a less marked departure from the older type of physical geography than are the last six chapters, which constitute somewhat less than a third of the total. These last chapters are distinctly of the kind that geography teachers have been asking for for some years. They are thoroughly humanized geography, dealing with the problems of inland waters, the relations of mountains and plateaus to life, coast lines and harbors, distribution and development of American industries, and the development of cities.

The book is profusely illustrated but, owing to the quality of the paper used in the earlier copies, many of the half tones do not come out well. Some of the sketch maps like Figures 149, 396 and 397, are difficult to read, but the series of black and white maps included in Figures 401 to 427 are very telling, indeed. The placing of colored maps at the back of the book, and the questions placed at the ends of chapters are thoroughly to be commended.

No strictly regional geography is introduced. The book is a treatment of geographical principles with illustrations drawn from the United States in particular and the world at large when desirable.

The book is too difficult for the average high school class, but should serve excellently the needs of normal schools and elementary college classes, and might be used in advanced high school classes. A great amount of material is compressed into many of the paragraphs, but the treatment is clear, the language is simple, and the style is lucid. It seems that the book ought to receive a hearty welcome for it is a *geography*, and introduces those phases of the subject which in recent years have come to be regarded as highly desirable.

R. H. WHITBECK.

General and Regional Geography for Students. By J. F. Unstead and E. G. R. Taylor. xii and 516 pp. Maps, diagrams, index. George Philip & Son, Ltd., London, 1911. 6s. 8½ x 5½.

Apparently the demand for humanized geography has made itself felt in England, for this book is decidedly not a physical geography. It is, as its title indicates, general and regional. The first half of the volume treats (often briefly) the important topics of physical geography—weathering, erosion, glaciation, the wind, etc. Climate and the atmosphere are rather fully discussed in four chapters. Considerable emphasis is laid upon the distribution of life—plant, animal and human. The treatment of physiography is distinctly subordinated to the treatment of those phases of geography in which man and his activities are involved.

Part II treats of regional geography. The authors here meet the difficulty which every writer of a regional geography of limited length must encounter, namely, the difficulty of satisfactorily describing all of the nations and their colonies in a single book, or part of a book. Half of Part II is given to Europe, while the British Isles are given more space than the entire Western Hemisphere. Colored maps are not employed, and the black and white sketch maps make an unfavorable impression. While the book is unattractive in appearance, it is thoroughly meritorious in its content. Causal relations are constantly recognized. The style is clear and direct and the matter is interestingly presented. The book will not meet American needs, at least as a textbook, but as a reference book, it ought to be quite widely useful.

R. H. WHITBECK.

Rabenort's Geographies. By William Rabenort. Europe. viii and 231 pp. Maps, ills., index. North and South America (exclusive of the United States). viii and 230 pp. Maps, ills., index. American Book Co., New York, 1912. 50 cents each. 9 x 6.

It is not quite clear why these books have been written and published. They do not, in any fundamental quality improve upon the other textbooks

on the market. They are simply informational; though an attempt at rational treatment seems to have been made. The author—a public school principal in New York—manifests no special qualifications for writing a geography. The usual compressing process is employed and many facts, more or less disconnected, are brought together. However, it may be said for the books that they are written in simple, natural language, well suited to the age of the children for whom they are intended. In size and general appearance, they are to be commended.

A Handbook of Geography. By A. J. Herbertson. Vol. 1: General Geography. The British Isles and Europe. xii and 500 pp. Maps, index. Thomas Nelson & Sons, London and New York, 1911(?). 4s. 6d. 7½ x 5.

This book is intended as a "work intermediate between the elementary school geography and such a standard work of reference as Dr. Mill's International Geography." Part I includes General Geodynamics, General Geomorphology, General Physical Geography, and Biogeography. Part II, entitled "Regional Geography or Land-Lore," is a study of the general geography of Europe, of its several countries and of the Russian Empire. Volume II will give similar treatment to other countries.

Part I is similar in scope to our physical geographies. The matter is presented less fully. The classification is much simpler than in our books, and the style is more terse. Human responses to earth causes are included in abundance.

The classification of land forms is less technical than is usual in America, and the reader does not need so intimate a knowledge of structural geology as is required for good work with most American books. The treatment is so condensed at times that a beginning student will find the material far less clear than in our more detailed volumes. The classification of the larger land forms into table-lands, scarplands, mountain-lands (with three subdivisions) and plain-lands, gives a basis of analysis that can be easily and readily applied in the later regional study of selected areas. The section on climate emphasizes the author's well known division of the earth into climatic provinces, a useful scheme in regional study. Part I forms an excellent introduction to the later and larger part of the book.

Ninety pages summarize the essentials of European geography. The treatment is clear, the facts well selected, and the black-and-white maps make the presentation attractive and the chapters extremely usable.

In the special chapters the order of treatment of large topics is causal, a relationship that is emphasized in many of the special points that are so often included in a merely informational way. The following extract, chosen at random, will indicate the usual method of presentation: "In the western counties of Great Britain and Ireland the abundant rains, which prevent the ripening of corn, favor the growth of grass, and more than one third of their area consists of permanent pasture."

The volume is a welcome reference source that presents accurately, clearly and causally the details and general principles of European geography. It deserves wide use as a reference volume when supplemented by a general atlas of a type now so much used in England and Germany.

RICHARD ELWOOD DODGE.

Das Kartenlesen. Erklärung der Spezialkarte 1:75,000 und der Generalkarte 1:200,000. Direkt auf der Karte erläutert und mit einer Anweisung zum Croquieren und zur Benützung der Bussole versehen. Von Gabriel Fambri. 4. vermehrte und verbesserte Auflage. 110 pp. Karte, Tafel und Zeichenschlüssel. Heinrich Schwick, Innsbruck, 1912. Mk. 2. 7½ x 5.

Captain Fambri's little book of a hundred pages is designed to bring out the full significance of the Austrian military maps to the minutest detail. His success must be judged by the calling for new editions in 1902 (the first came out in 1901), 1905 and 1912, while the author was teacher successively in the military schools of Hermannstadt, Innsbruck, Strass and Wiener Neustadt. His work appears to have approved itself to many readers. It is adequately illustrated

by the reproduction of a small district from the general map, 1:200,000, and also from the special map, 1:75,000, to which the exercises of the text refer. These are very minute and clear. The wealth of meaning read from this map will be a revelation to many readers. No one who uses the Austrian map should be without this handbook. It has especial interest for the reviewer in his conviction that contour maps are more expressive, for it brings out fully the possibilities of hachure work.

MARK JEFFERSON.

Columbia Elementary Geography. By S. C. Schmucker and Louis Nusbaum. v and 138 pp. Maps, ills. Hinds, Noble & Eldredge, New York, 1912. 10 x 8½.

The authors follow the modern plan of explaining and illustrating the underlying factors of geography and then applying them regionally. As far as possible the facts of home geography are used to illustrate the larger world features. Attractive illustrations add to the value of the book.

F. V. EMERSON.

GENERAL

Touring in 1600. A Study in the Development of Travel as a Means of Education. By E. S. Bates. xiv and 418 pp. Ills., bibliography, index. Houghton Mifflin Company, Boston. 1911. $3. 9 x 6.

There are just ten pages in this book which are not really in the picture, the final episode in the chapter on inns. But this one divagation into the methods of fiction might cast a doubt on the accuracy of the rest of the work, an accuracy which we make haste gladly to note is thoroughly confirmed by independent investigation.

There is a complex appeal in this interesting work. The student of the history of social development of the beginnings of Europe will find glimpses of the life which are in no modern works and which he might fail to adjust to their proper conditions when laboriously digging them out piecemeal from the old records. But to us the more particular appeal lies in this work as constituting a valuable foundation for the study of geography. Geography would be but parochial if it were not for those who go abroad. Every map is based on the man who has gone to sea. At the period which Mr. Bates has selected for the time of his examination, a glance at the maps will show how little of science the knowledge of earth had accumulated. Any map of the period will show at the edges of its knowledge the strange figures of water monsters and chimeras dire, each a challenge to the next voyager to go yet beyond and find for himself what really lay there. Those maps we may scarcely read, yet when we look at the crudeness of their drawing, the overcrowded paucity of their striving for minute detail, we must remember that they were ment to be read, that they were the sole guide to the highways of the world, and because men traveled with these maps in hand we feel sure that in their own time they were found a sufficient guide. The great value of this surpassingly interesting study is that it provides the students of the beginnings of geography with a carefully supported comment upon the method of travel when such maps were standard.

Naturally the Pilgrimage of Grace, a sanctifying excursion as popular with Christendom as is the Hadj to the Moslem, occupies a large space in the narrative, for the period fixed for study catches it just before it was given over. The more modern idea of the object of travel was just coming into being in 1600, the seeing of strange countries for pleasure and for profit. We find it well brought out that the profit of travel was not material profit. Commerce had not yet come to such control of the affairs of life as to provide mileage b oks foi ungeographical commercial travelers. The travelers of that day were the beggars, those of the 1eligious orders and those of slighter sanctity who bore the palmer's shell, and the opulent. Leaving naught behind at last night's shelter, having naught to carry with them, looking for naught wherever their steps might lead them, these empty viators sang all the way with merry hearts. In and out through these pages the beggar wanderer crowds happily upon his betters. His betters could fare scarcely better along highroads where rags were the safest

conduct. Eager to be at the fountain heads of the new learning the opulent travelers had to face the quagmire and the footpad and the zealot, a trinity of ill-conceited circumstances which pressed on all alike.

With due respect to the publishers, we could wish that this volume might have borne the imprint of the Hakluyt Society. Its value is so great, its interest is so well sustained in every point, save for what seems just a single slip, that it would find its honored place with the record of the great journeys by land and sea, for it puts life and comprehension into each such record. Therefore every reader who has so much as one geographical book upon his shelf will find that book made richer by the presence at its side of this really invaluable study.

WILLIAM CHURCHILL.

Retrospection: Political and Personal. By Hubert Howe Bancroft. x and 562 pp. Index. Bancroft Co., New York, 1912. $2. 8 x 5½.

Bancroft's Retrospection, written in part after the author's eightieth birthday, is a book to be opened at random and read a few pages at a time. There is no order of chapters or parts and yet it is interesting. The reflections of a man who has lived a long life in a new country, who has watched and helped it grow from a primitive no-man's land to a great empire and who has devoted a large part of his energy to elucidating its history, are written from a wealth of experience that cannot be equaled. Every topic related to the West, from Coronado's march to the Republican National Convention of 1912, is touched upon, if only lightly. Though the author is evidently more than prejudiced on many subjects of history and current politics, yet the book offers much that is of great value. Certain chapters especially are illuminating for the understanding they give of topics concerning which the East at least is only partially informed.

The style is clear, inspiriting and even spicy. The author writes with a frankness that is sometimes almost appalling, and his statements are so definite that every image is clear-cut. It is a book for odd moments that is well worth reading, with certain mental reservations. RICHARD ELWOOD DODGE.

Steamship Conquest of the World. By Frederick A. Talbot. (Conquests of Science Series.) xii and 344 pp. Ills., index. J. B. Lippincott Co., Philadelphia, 1912. 6s. 8½ x 6.

The content of this volume can be best expressed perhaps in the author's own words, namely, that it is intended "for the general reader who is not familiar with the technics of the shipbuilding art: who entertains only hazy notions concerning the steamship, its design, construction, appointments and the efforts that are being made to render transportation absolutely safe; and who has no idea of the character of its influence upon the world's progress."

The book is a welcome addition to our literature on the significance of marine transportation. Although non-technical it is illuminating throughout. The sequence of execellent photographs which tell a story in themselves are closely linked with the text, thereby emphasizing the salient features. The statement (p. 121) that steamers sailing from Europe "penetrate to the head of Lake Superior or call at Chicago" is perhaps just a slip in an enthusiastic discussion of "Mammoth Fresh-Water Liners and Freighters" on the Great Lakes. The enlightenment to be gained from this book is well worth the time of both geographer and general reader. EUGENE VAN CLEEF.

Zur Weltpolitik. Von Dr. Carl Peters. 383 pp. Karl Siegismund, Berlin, 1912. 9½ x 6½.

Dr. Peters has been such a stormy petrel in European political comment that any volume from his pen bears immediate promise of polemical content. This book is no disappointment on that score. In consists of editorial and other articles which he has contributed to the German press. The book is interesting. Dr. Peters has a delightful way of saying things with a sting to them, and, if we are not led away by the delusion that this is more than half as important as he maintains that it is, there will be found much entertainment in these papers.

WILLIAM CHURCHILL.

OTHER BOOKS RECEIVED

These notes do not preclude more extended reference later

NORTH AMERICA

CHICAGO. The Great Industrial and Commercial Center of the Mississippi Valley. An Area with an Annual Tonnage of 22 Billion Tons. By George E. Plumbe. 144 pp. Maps, ills. Chicago Assoc. of Commerce, Chicago, 1912. 9 x 6½. [A concise résumé of the industrial and commercial growth of Chicago. Much statistical data.]

WACKER'S MANUAL OF THE PLAN OF CHICAGO. Municipal Economy. Especially Prepared for Study in the Schools of Chicago. By Walter D. Moody. 147 pp. Ills. Chicago Plan Commission, 1912. 75 cents. 10 x 8. [Planning for the future growth of the city in an orderly, systematic and artistic manner.]

MANUFACTURING IN PHILADELPHIA, 1683-1912. By John J. Macfarlane. 97 pp. Ills. Commercial Museum, Philadelphia, 1912. 9½ x 6½.

MEXICAN YEAR BOOK. Financial and Commercial Handbook, compiled from Official and other Returns. 1912. Issued under auspices of the Dept. of Finance. vii and 467 pp. Maps, index. McCorquodale & Co., Ltd., London. Agent: John Gibson. 21s. 9 x 6. [Authoritative data on the government organization, banking system, railroads, agriculture and manufactures; information on the mining industry and production; translation of the complicated stamp tax and particulars as to new laws affecting insurance, mining and exploration.]

AFRICA

THE ADVENTURES OF AN ELEPHANT HUNTER. By James Sutherland. xviii and 324 pp. Ills., index. Macmillan Co., New York, 1912. $2.25. 9 x 6. [A tale of African hunting with sketches of the natives.]

FOUNTAINS IN THE SAND. Rambles among the Oases of Tunisia. By Norman Douglas. 251 pp. Ills., index. James Pott & Co., New York, 1912. $2.50. 9 x 6½. [A good description especially as regards the natives of the oases.]

VERSUCH EINER BODENPLASTISCHEN SKIZZE DES ATLASVORLANDES VON MAROKKO. Inaugural-Dissertation. Univ. Marburg. Von Rudolf Zietz. 88 pp. Ills. Kgl. Universität, Marburg, 1911. 9 x 6. [A study of the geographic factors affecting the uplifted region of southwestern Morocco.]

LA MALADIE DU SOMMEIL AU KATANGA. By F. O. Stohr. 83 pp. Maps, ills. Constable & Co., Ltd., London, 1912. 4s. 9½ x 6. [A systematic study of the disease and its spread together with an account of the measures taken to check its ravages.]

LA COMPAGNIE FORESTIÈRE SANGHA-OUBANGUI. Ses Origines—Ses Méthodes—Ses Résultats—Ses Aspirations. 138 pp. Maps, ills. Comp. Forest. Sangha-Oubangui, Paris. 9½ x 6½. [Conveys a fair idea of the value of modern industrial undertakings as a help to scientific and technical research.]

LA COMPAGNIE FORESTIÈRE SANGHA-OUBANGUI. Travaux d'Aménagement Forestier. Recherches sur les Meilleurs Procédés de Récolte. Aperçu d'ensemble au mois de Janvier 1912. 11 pp. Maps, ills. Comp. Forest. Sangha-Oubangui, Paris.

ASIA

DIE ALTEN SEIDENSTRASSEN ZWISCHEN CHINA UND SYRIEN. Beiträge zur alten Geographie Asiens. 1. Abteil. Von Albert Herrmann. Series: Quellen und Forschungen zur alten Geschichte und Geographie. No. 21. 129 pp. Map. Weidmannsche Buchhandlung, Berlin, 1910. Mk. 6. 10 x 6½. [A notable contribution to our knowledge of the ancient trade routes and relations between China and the Irano-Turanian countries. Ancient texts studied in the light of our present acquaintance with the geography of the region.]

EUROPE

MACDONALD'S TOURISTS' GUIDE TO SCOTLAND. 5 Volumes in one. viii and 104 pp. Maps, ills. W. MacDonald & Co., Ltd., London, 1912(?) 2s. 7 x 5. [An up-to-date edition. Very thoroughly compiled.]

TRANSPORT FACILITIES IN THE MINING AND INDUSTRIAL DISTRICTS OF SOUTH WALES AND MONMOUTHSHIRE. Their History and Future Development. By Clarence S. Howells. Public., Dept. of Econ. and Polit. Sci., Univ. Coll. of South Wales and Monmouthshire, No. 2. 56 pp. P. S. King & Son, London, 1911. 2s. 9½ x 7. [A discussion of the economic aspect, past and future, of the transportation question mainly in Glamorganshire and Carmarthenshire, between about 1750 to 1909.]

NEW GRANGE (BRUGH NA BOINNE) AND OTHER INCISED TUMULI IN IRELAND. The Influence of Crete and the Aegean in the Extreme West of Europe in Early Times. By George Coffey. xi and 118 pp. Map, ills., index. Hodges, Figgis & Co., Dublin, 1912. 6s. 10 x 6½. [Concludes that the spiral probably reached the Baltic by sea and thence traveled southwards to Ireland.]

BLACK'S GUIDE TO IRELAND. 25th edition. xxxii and 384 pp. Maps, ills., index. A. & C. Black, London, 1912. Macmillan Co., New York. $1.75. 7 x 5. [Revised edition of this exhaustive compilation. Text accompanied by numerous maps.]

COMMON LAND AND INCLOSURE. By E. C. K. Gonner. xxx and 461 pp. Maps, index. Macmillan Co., New York, 1912. $4. 9 x 6. [Demonstrates how the movement whereby land in England came into agricultural use, was continuous and due to the operation of normal causes.]

CRACOW: The Royal Capital of Ancient Poland: Its History and Antiquities. By Leonard Lepszy. Translated by R. Dyboski. xv and 210 pp. Ills., index. F. A. Stokes Co., New York, 1912. $3.50. 10 x 7½. [The history and description of the numerous monuments of ancient civilization and art are here brought to the notice of English speaking students.]

DAS DEM MEERE ENTRUNGENE LAND. Plauderei über Holland. Von M. J. Brusse. Mit Buchschmuck von J. B. Heukelom. 63 pp. W. L. & J. Brusse, Rotterdam, 1912(?) 9 x 5½.

DER HAFEN VON ROTTERDAM. Ausgabe der Stadt Rotterdam. 86 pp. Maps, ills. W. L. & J. Brusse, Rotterdam, 1912. 9 x 6.

WITH ROOSEVELT THROUGH HOLLAND. By M. J. Brusse. Illustrated by J. G. Veldheer. 62 pp. Holland America Line, New York, 1911. 8½ x 6½.

UN VIAJE EN HOLANDA. Por M. J. Brusse. 63 pp. Ills.

UMA VIAGEM A HOLLANDA. Por M. J. Brusse. 63 pp. Ills. Lloyd Real Hollandez, Amsterdam, 1912. 9 x 6½.

GÉOGRAPHIE DU DÉPARTMENT DES CÔTES-DU-NORD. Par Paul Joanne. 8th edition. 64 pp. Map, ills. Hachette et Cie, Paris, 1911. 1 fr. 7 x 4½.

ESQUISSE GÉOLOGIQUE DE LA CÔTE-D'OR. Par L. Collot. 39 pp. Map, ills. E. Jacquot, Dijon, 1911. 40 cents. 10 x 6½. [A regional sketch, followed by notes on the drainage and a bibliography of about 200 titles.]

GÉOGRAPHIE DU DÉPARTMENT DE LA DRÔME. Par Paul Joanne. 8th edition. 68 pp. Map, ills. Hachette et Cie, Paris, 1912. 1 fr. 7 x 4½.

TESTO-ATLANTE DI GEOGRAFIA PER LE SCUOLE SECONDARIE SUPERIORI CON PARTICOLARE RIGUARDO ALLA GEOGRAFIA COMMERCIALE. (L'Italia). Di Assunto Mori. 251 pp. Maps, ills. G. B. Paravia e Comp., Torino, 1912. Lire 3.60. 10 x 7. [A geographical description of the country and its natural regions. The text is enlivened by descriptive passages selected from the works of scientific writers.]

POPOLI E PAESI. Letture Geografiche ad uso delle scuole medie superiori. I: L'Italia Nostra. Di Piero Gribaudi. xii and 287 pp. Maps, ills. Libreria Editrice Internaz., Torino, 1912. L. 2.50. 9 x 6. [Selections from noted Italian writers and geographers. Forming an advanced course in descriptive geography when taken together.]

LA SICILIA. Studio Geografico-Militare. Di V. Pappalardo. 109 pp. Enrico Voghera, Rome, 1911. L. 1.50. 9½ x 6. [The value of Sicily as a base for land and naval operations in the event of an international war is discussed.]

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ECONOMIC GEOGRAPHY

WIRTSCHAFTSGEOGRAPHIE IN VERBINDUNG MIT STAATSBÜRGERKUNDE FÜR KAUFMÄNNISCHE FORTBILDUNGSSCHULEN. Von Werner Becker. 1. Teil: Das deutsche Wirtschaftsleben, 58 pp. 50 pfg. 2. Teil: Die Weltwirtschaft, 63 pp. 60 pfg. 3. Teil: Deutschlands Stellung in der Weltwirtschaft, 63 pp. 60 pfg. Fr. W. Ruhfus, Dortmund, 1912(?) 8½ x 5½ each. [An elementary introduction to economic geography. The subject is first broached through conditions prevailing in Germany, and subsequently in the light of the country's relation to the rest of the world.]

GEOGRAFIA COMMERCIALE ED ECONOMICA. Di Benvenuto Cessi. Series: Bibl. Stud., Vol. 243-244. viii and 140 pp. R. Giusti, Livorno, 1913. L. 1. 6½ x 4. [The leading facts of the subject are presented in brief form. A low priced edition within reach of all students.]

GENERAL

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NEW MAPS

EDITED BY THE ASSISTANT EDITOR

For system of listing maps see p. 75 of this volume

NORTH AMERICA

ALASKA-YUKON TERRITORY. Sketch Map of the Country Adjacent to the Northern Section of the Boundary between Alaska and Canada by Douglas H. Nelles [*sic*], D. L. S. 1912. 1:500,000. [In two sections:] (1) 69°55′-68°35′ N.; 142°-140° W. (2) 68°35′-67°20′ N.; 142°-140° W. 1 color. With inset [Alaska], 1:20,000,000, showing location of main map. Accompanies "The Exploration and Survey of the 141st Meridian, Alaska" by D. H. Nellas, *Geogr. Journ.*, Vol. 41, No. 1, 1913, pp 48-55.

[Valuable map of the region adjoining the northern end of the Alaska-Canada

boundary, extending from the Porcupine River north across the intervening mountains to the Arctic Ocean. The map is due to the zeal of the author who, during his spare time as a member of the Boundary Survey in 1911, sketched in the country as far as he could see on each side of the line and thereby expanded the four-mile strip of the official survey into a strip from 25 to 40 miles wide. Relief is in brown shading; forested areas and the trails used are shown. Unfortunately no elevations are given: the only one mentioned in the text, 3,900 feet for the summit of the "British Mountains" (69°8′ N. and 141° W.), not being shown on the map.]

CANADA

NOVA SCOTIA. [Geological map of Nova Scotia]. 1:63,360. [Two sheets:] (a) Sheet No. 99: Hall Harbour, Kings County. 45°15′-45°4.5′ N.; 64°55′-64°33′ W. 2 colors. 1910. (b) Sheet No. 84: Kingsport, Hants and Kings Counties. 45°15′-45°4.5′ N.; 64°33′-64°11′ W. 5 colors. 1911. Geological Survey (of Canada), Ottawa.

ONTARIO-QUEBEC. Topographic Map. 1:63,360. 4 colors. Department of Militia and Defence, Ottawa; also Geographical Section, General Staff, London. [Publication] No. 2197. 50 cents a sheet. [Twenty-eight sheets enumerated in meridional strips proceeding from west to east. Name and number of each sheet as on original. Regular sheets cover 15′ in latitude and 30′ in longitude; of these only the coordinates of the S. E. corner are given.] No. 36: Port Stanley. 42°30′ N. and 81°0′ W. 1910. No. 31: Port Burwell. 42°30′ N. and 80°30′ W. 1909. No. 30: Simcoe. 42°45′ N. and 80°0′ W. 1909. No. 29: Long Point, 42°30′ N. and 80°0′ W. 1909. No. 4: Grimsby. 43°0′ N. and 79°30′ W. 1907. No. 5: Dunnville. 42°45′ N. and 79° 30′ W. No. 3: Niagara. 43°0′ N. and 79°0′ W. No. 6: Welland. 42°45′ and 79°0′ W. No. 7: Fort Erie. 43°5′-42°50′ N.; 79°0′-78°45′ W. 1907. No. 14: Ottawa. 45°15′ N. and 75°30′ W. 1908. No. 15: Kemptville. 45°0′ N. and 75°30′ W. 1908. No. 8: Merrickville. 44°45′ N. and 75°30′ W. 1908. No. 10: Brockville. 44°30′ N. and 75°30′ W. 1908. No. 11: Mallorytown. 44°15′ N. and 75°45′ W. 1908. No. 19: Thurso. 45°30′ N. and 75°30′ W. With inset: 45°35′-45°30′ N.; 75°50′-75°30′ W. 1908. No. 16: Russell. 45°15′ N. and 75°0′ W. 1908. No. 13: Winchester. 45°0′ N. and 75°0′ W. 1908. No. 9: Morrisburg. 44°45′ N. and 75°0′ W. 1908. No. 20: Hawkesbury. 45°30′ N. and 74°30′ W. 1909. No. 18: Alexandria. 45°15′ N. and 74°30′ W. 1909. No. 17: Cornwall. 45°15′-44°57′ N.; 75°0′-74°30′ W. 1909. No. 28: Lachute, 45°30′ N. and 74°0′ W. 1910. No. 25: Vaudreuil. 45°15′ N. and 74°0′ W. 1909. No. 21: Huntingdon. 45°15′-44°59.5′ N.; 74°30′-74°0′ W. 1908. No. 22: Laval. 45°30′ N. and 73°30′ W. 1909. No. 23: Lachine. 45°15′ N. and 73°30′ W. 1909. No. 24: Chateauguay. 45°0′ N. and 73°30′ W. No. 26: St. Johns. 45°15′ N. and 73°0′ W. 1909. No. 27: Lacolle. 45°0′ N. and 73°0′ W. 1909.

[All of the sheets thus far issued of this excellent topographic map of the settled portion of Ontario and Quebec begun by the Department of Militia and Defense in 1904. The index map was listed under "Canada" (second entry) in the *Bull.*, Vol. 43, 1911, p. 955. In execution these sheets are similar to the topographic sheets of the U. S. Geological Survey; their range of expression is far greater, however. Thus, woods are shown in green (on some sheets distinction being made between deciduous and evergreen), and all buildings are differentiated according to whether they are built of wood or of stone. Besides there are separate symbols for railroad stations (a decided lack on the U. S. G. S. sheets), post offices, churches (those with and without spires being distinguished), mills (three kinds), schools, blacksmith shops, hotels or taverns, telegraph and telephone offices and cemeteries. Telegraph and telephone lines are shown; metaled roads and three kinds of bridges are distinguished. Relief is shown in contours in brown; interval, 25 feet.

Fort Erie sheet, which includes Buffalo, arbitrarily shows all buildings within the limits of that city as built of stone and those without as built of wood. For Canadian cities the map is authoritative, and here the distinction between the two kinds of houses is of material anthropogeographic interest, as is well shown in the case of Ottawa and especially of Hull.

The northern third of the Thurso and of the Hawkesbury sheet is blank.]

SASKATCHEWAN. Saskatchewan: Map Showing Disposition of Lands. Prepared in the Railway Lands Branch. Tenth edition. Corrected to January 1st, 1912. 1:792,000. 55½ - 48⅝° N.; 110¾° - 101° W. 8 colors. Department of the Interior, Ottawa, 1912.

[Shows, by sections and even quarter sections, state of land tenure, distinguishing between land finally disposed of, land homesteaded prior to 1911 and during 1911, and land leased for grazing. Indian reservations and forest reserves shown.]

SASKATCHEWAN. Cereal Map of Saskatchewan. Showing Acreage under Crop in each Township in Wheat, Oats, Barley and Flax. Cereal information prepared in the Railway Lands Branch . . . from data supplied by Provincial Government. Second edition, 1910. 1:792,000. 54¼° - 49° N.; 110⅓° - 101° W. 6 colors. Department of the Interior, Ottawa, 1910.

[Analagous to Cereal Map of Alberta listed under "Alberta" in *Bull.*, Vol. 44, 1912, pp. 716-717. Circles, differently colored for each cereal, indicate by their relative sizes acreage of each township. First edition of this type of maps, which comprised Manitoba, Saskatchewan and Alberta in one, listed under "Canada" in *Bull.*, Vol. 43, 1911, p. 159.]

UNITED STATES

MISSOURI, ETC. (a) The Relative position of Missouri with respect to the Prairies, the Ozarks, and the Mississippi Lowlands. [1:40,000,000.] [43° - 29° N.; 97° - 86° W.]

(b) Generalized Map Showing the Physiographic Divisions of Missouri. [1:4,000,000.]

(c) Generalized Relief Map of Missouri. [1:3,000,000.]

Accompany, as Figs. 4, 5 and 6 on pp. 42 and 43, "A Geographical Interpretation of Missouri" (first part) by F. V. Emerson, *Geogr. Journ.*, Vol. 41, No. 1, 1913, pp. 39-48.

[Map (b) of value in showing the boundaries of the natural divisions. On map (c) relief shown by hachuring.]

NORTH CAROLINA. Map of North Carolina. Prepared by N. C. Geological and Economic Survey from Base Map Compiled by the United States Geological Survey in Cooperation with the State of North Carolina. [1:685,000.] North Carolina Geological and Economic Survey, [Chapel Hill], 1911.

[Conventional type of map with political coloring predominating. Locational element accurate (based on the map of the state, scale 1:500,000, mentioned in the *Bull.*, Vol. 44, 1912, p. 841); representation of relief primitive: hachures only along the divides. Counties distinguished by areal coloring.]

VIRGINIA. A Geological Map of Virginia. By Thomas Leonard Watson. Joel H. Watkins, Draftsman. 1:500,000. 23 colors. Virginia Geological Survey [Charlottesville.]

[Standard geological map of the state. Twenty-two formations distinguished; columnar sections and magnetic declinations given.]

SOUTH AMERICA

BRAZIL. Carta das Lagôas dos Patos e Mirim mostrando a linha de navegação entre os portos interiores e a Barra do Rio Grande do Sul. O levantamento das lagôas foi feito por Nicolau Pujol, Ajudante da Directoria. 1:500,000. 29°50′ - 33°50′ S.; 53°40′ - 50°10′ W. 4 colors. With two insets: (a) Planta hydrographica do Rio Guahyba mostrando a linha de navegação entre Itapuan e Porto Alegre. 1:150,000. 30°0′ - 30°27′ S.; 51°20′ - 51°5′ W. 4 colors. (b) Planta hydrographica da Lagôa do Rio Grande do Sul mostrando a linha de navegação desde a barra Até a entrada das lagôas dos Patos e Mirim. 1:150,000. Directoria da Viação da Secretaria das Obras Publicas do Estado do Rio Grande do Sul. [Porto Alegre], 1911.

[Excellent hydrographic map of the two lagoons of southernmost Brazil, the northern of which gives access to Porto Alegre. Soundings in meters, lighthouses and lights in red, buoys, etc., in black. On land, railroads in black and wagon roads in brown. The two insets are enlargements of the corresponding parts of the main map. The technical execution, by Kümmerly & Frey of Bern, Switzerland, is excellent.]

BRAZIL. Mappa (Geologico) Reduzido dos Estados do Ceará, Parahyba e R. Gr. do Norte (por Roderic Crandall e Horace E. Williams). 1:3,000,000. 2°30′ - 8°0′ S.; 42°0′ -34°30′ W. 5 colors. Suppl. to Publ. No. 7, Series I, G, Serviço Geologico e Mineralogico do Brazil, Rio de Janeiro, 1910.

[Valuable geological map distinguishing between (1) Ceará series, (2) Cretaceous, (3) Quaternary, (4) granite, (5) gneiss and crystalline schists.]

AFRICA

BRITISH EAST AFRICA. Provisional Map of East Africa Protectorate. 1:1,500,000. 4°45′ N. - 4°45′ S.; 33°50′ - 43°10′ E. 2 colors. With inset: [Zanzibar and Pemba Islands.] 1:1,500,000. Geographical Section, General Staff, [Publication] No. 2542, London, 1910.

[General map on relatively large scale, bringing out well our lack of knowledge of the whole eastern half of the protectorate. Relief in generalized contours.]

EGYPT. Egypt 1:250,000. [Two sheets:] (1) Sheet 2-E: South-West Delta. 30°48′ - 29°48′ N.; 29°45′ - 31°15′ E. 6 colors. (2) Sheet 1-E: North-West Delta. 31°48′ - 30°48′ N.; 29°45′ - 31°15′ E. 6 colors. Survey Department (of Egypt), Cairo, 1910.

[Administrative divisions emphasized, *mudiriya* and *merkez* boundaries being shown in colors. Canals in blue and drains in green, distinction being made between navigable and unnavigable parts. Edge of desert shown, also regular desert routes of traffic as well as explorers' occasional routes. Sheets 1-F and 2-F will complete the Nile Delta. The map will probably be continued to cover the whole area embraced by the 1:50,000 sheets of the Survey.]

EGYPT. (Map of the Delta.) 1:200,000. 31°48′ - 29°48′ N.; 29°45′ - 32°45′ E. 10 colors. Survey Department (of Egypt), Cairo, Feb. 1912.

[The same map on a somewhat larger scale as that listed immediately above with the addition, however, of the two sheets needed to complete the Delta. Administrative divisions in areal colors.]

GERMAN EAST AFRICA. Der nördliche Teil von Urundi. (Deutsch-Ostafrika.) Nach eigenen Aufnahmen vom *P. Superior* J. M. M. van der Burgt konstruiert von C. Schmidt. 1:200,000. 2°7′ -3°23′ S.; 29°39′ - 30°26′ E. 5 colors. Taf. 53, "Land und Leute von Nordurundi (Deutsch Ostafrika)" by J. M. M. van der Burgt, *Pet. Mitt.*, Vol. 58, II, Dec. 1912, pp. 324-327.

[Valuable map, based on route surveys, of hitherto insufficiently explored region lying east of Ruanda and between the Kagera Nile and the northern end of Lake Tanganyika. Relief in brown, drainage in blue, author's route and tribal names in red.]

PORTUGUESE EAST AFRICA. Africa Oriental Portugueza. Folha No. 4: Zumbo-Tete. 1:1,000,000. 14°0′ - 17°30′ S.; 30°12′ - 33°52′ E. 3 colors. Commissão de Cartographia, Minist. da Marinha e Colonias, Lisbon, 1911.

[Sheet of the official map of Portuguese East Africa which includes the uppermost Portuguese part of the Zambezi valley. Adjoining portion of Rhodesia shown to the extent of the sheet. Relief in brown shading, drainage in blue.]

SOUTHERN NIGERIA. Southern Nigeria to Illustrate the Paper by A. E. Kitson. 1:2,000,000. 10° - 4° N.; 2° - 11° E. 1 color. With two insets: (1) [Northern and Southern Nigeria]. 1:10,000,000. 14° - 4° N.; 2½° - 14° E. 1 color. (2) [Lagos and environs]. 1:200,000. [6°25′ N. and 3°25′ E.] 1 color. Accompanies "Southern Nigeria: Some Considerations of Its Structure, People, and Natural History" by A. E. Kitson, *Geogr. Journ.*, Vol. 41, No. 1, 1913, pp. 16-38.

[Based on map of Northern and Southern Nigeria on the same scale published by the Geographical Section of the General Staff. Locational element predominates; relief only shown to a limited extent. Route of the Mineral Survey, of which the author was the director, shown. Inset (1) distinguishes the delta area of the Niger subject to inundation.]

ASIA

CHINA. Map of China Shewing Railways, Telegraphs and Treaty Ports. Aug. 1908, corrected to Dec. 1911. 1:5,000,000. 43° - 18° N.; 91° - 129° E.

2 colors. Geographical Section, General Staff, [Publication] No. 2361, London, 1912.

[Distinguishes between railroads open to traffic, under construction and projected. List of railroads with remarks on margin of map.]

EAST INDIES. (a) Magellans Kurs durch die indische Inselwelt. Konstruiert von O. Koelliker. 1:12,500,000. 13° N.-11° S.; 109°-129° E. 3 colors.

(b) Antonio Pigafettas 23 Kartentafeln in ½ der Originalgrösse. Photographie der Originale in der Biblioteca Ambrosiana, Mailand . . . (Mit Einzeichnung des Kurses der Flotte durch O. Koelliker). 1 color.

Taf. 54 and 55, "Kurs der Magellanschen Flotte durch die indische Inselwelt auf der ersten Erdumsegelung 1519-22" by O. Koelliker, *Pet. Mitt.*, Vol. 58, II, Dec., 1912, p. 335.

[Map (a) a reconstruction of the route of Magellan's fleet through the East Indies on the basis of Pigafetta's diary and charts and Albo's log book; map (b) a reproduction in black and white of Pigafettas 23 inset charts with the reconstructed route of the fleet shown on each in red.]

TURKEY IN ASIA. Lower Mesopotamia between Baghdad and the Persian Gulf. 1:1,000,000. 34°-29° N.; 43½°-49½° E. 4 colors. Topographical [now Geographical] Section, General Staff, [Publication] No. 2563, London, 1911.

[Similar in scope to map listed under "Turkey in Asia" (second entry) in *Bull.*, Vol. 45, No. 1, 1913, pp. 78-79. River courses in dark blue: areas liable to inundation and lakes in light blue; relief in brown shading; date gardens in green.]

EUROPE

BALKAN PENINSULA. Geographische und kulturelle Zusammenhänge Serbiens mit dem Adriatischen Meere. Entworfen von Prof. Dr. Jovan Cvijić. 1:1,500,000. 45⅔°-40⅓° N.; 17¼°-23⅔° E. 10 colors. Taf. 57, "Der Zugang Serbiens zur Adria" by J. Cvijić, *Pet. Mitt.*, Vol. 58, II, Dec., 1912, pp. 361-364.

[Reproduction of Pl. 51 of Stieler's Handatlas on which is shown, in addition, the best route for a railroad giving Servia its logical outlet to the Adriatic, together with the tributary territory; also the easternmost limit which the commercial influence of the Adriatic attained during its maximum development in the middle of the nineteenth century.]

RUSSIA. Die russischen Eisenbahnen. Auf Grund des Sborniks der Stationsentfernungen für die russischen Bahnen entworfen von W. Gerhardt, Kgl. Eisenbahnsekretär. Herausgegeben mit Genehmigung des königlich Preussischen Ministeriums der Öffentlichen Arbeiten. Mean scale 1:2,500,000. [64°-38° N.; 17°-65° E.] 3 colors. With 14 insets: (I) Moskau. (II) Warschau. (III) St. Petersburg. (IV) Riga. (V) Industriebezirk um Nikitowka. (VI) Zarizyn. (VII) Ssaratow. (VIII) Grenzbezirk Herby-Ssossnowizy-Graniza. (IX) Lods u. Koljuschki. (X) Taschkenter und Mittelasiatische Eisenbahn. (XI) Baladshary und Baku. (XII) (Sibirische, Transbaikal, Ostchinesische und Ussuri Bahnen). (XIII) Belostok. (XIV) Brest. In four sheets. With a list of railroad lines and stations, 16 pp. Carl Flemming, A. G., Glogau (1909).

[Diagrammatic map of Russian railroads distinguishing between different systems and showing practically all stations. Government, private and auxiliary (Zufuhrbahnen) lines are differentiated, 24 being shown of the first, 18 of the second and 10 of the third category. Gage and number of tracks are also expressed by means of symbols. Because of the diagrammatic nature of the representation the geometrical relationships of the map are often distorted.]

POLAR

ANTARCTIC. Chart of the Antarctic Region between Latitudes 75° S. and 90° S. and Longitudes 100° W. and 150° E. [1:5,200,000.] Sector between 155° E.-140° W. and 75° S. Oriented S. 1 color. Accompanies, facing p. 438, Vol. II, "The South Pole" by R. Amundsen, London and New York, 1913, and "The Norwegian South Polar Expedition" by R. Amundsen, *Scott. Geogr. Magaz.*, Vol. 29, No. 1, 1913, pp. 1-13.

[The original map accompanying Amundsen's narrative in English of his South Polar expedition. The map illustrating his article in the *Scott. Geogr.*

Magaz. is the same map, while that accompanying his article in the *Geogr. Journ.*, listed below, is an independent compilation. The original bears the name "Carmen Land" for the land lying to the east of the bight in which the Ross Barrier ends. In other respects the content of the map is the same as of that in the *Geogr. Journ.*]

ANTARCTIC. Routes of Captain R. Amundsen's South Polar Expedition 1911-12. 1:6,000,000. Sector between 150° E.-140° W. and 74° S. 2 colors. With inset: [Polar cap within 30° S. showing] Track of the "Fram." 1:8,000,000. 2 colors. Accompanies "The Norwegian South Polar Expedition" by R. Amundsen, *Geogr. Journ.*, Vol. 41, No. 1, 1913, pp. 1-16.

[Shows Amundsen's route and the complete nomenclature given on the map accompanying Amundsen's book, listed above, with the representation of South Victoria Land more complete, however. The elevations of points on the Antarctic Plateau do not entirely correspond on both maps. Thus, the following elevations are given on the map in the *Geogr. Journ.*, as compared with those given on the map in Amundsen's book (here enclosed in parentheses): at 89° S., 10,650 ft. (10,970); at 87⅔°, 10,750 ft. (11,075); at 87°, 9,450 ft. (9,730); at 85°35′, 10,600 ft. (10,920).]

WORLD AND LARGER PARTS

WORLD. Weltkarte der Funken- und Kabel-Telegraphie bearbeitet von Otto von Lossberg und Hermann Behner, Berlin. [Mercator's projection: equatorial scale] 1:47,000,000. 3 colors. With two insets: (1). Mittelländisches Meer. 1:18,000,000. 2 colors. (2) Nordsee und Kanal. 1:10,800,000. 2 colors. Gea Verlag, Berlin. Price M. 5.

[Shows, in red, wireless stations and routes of steamship lines equipped with wireless telegraphy and, in blue, cable lines with statement of nationality. Key lists are printed on the map for the identification of the 258 wireless stations and the 88 steamship lines shown.]

EDUCATIONAL

EGYPT. Map of Egypt. 1:750,000. 32°-21½° N.; 25°-37° E. 5 colors. With inset: [Political map of] Egypt and Adjacent Countries. [1:11,300,000.] 33° N.-4½° S.; 19½°-41° E. 10 colors. In six sheets. Survey Department (of Egypt), Cairo, 1909. Price 700 milliemes ($3.50).

[A school wall map primarily executed for the Egyptian Ministry of Education. Land is shown in buff, cultivated land (chiefly the flood plain of the Nile) in green, relief in brown shading and the Nile in blue. The nomenclature, which is printed in small type, is rather too copious for educational purposes. Although of value, the map does not entirely fulfill the requirements of a school wall map: elimination of non-essentials and presentation of essentials in the bold style necessary to insure legibility at a distance.]

ATLASES

The Cambridge Modern History Atlas. Edited by A. W. Ward, G. W. Prothero, Stanley Leathes, assisted by E. A. Benians. (The Cambridge Modern History: Vol. XIV). xii + 229 pp. and 141 plates. Macmillan Co., New York, 1912. $6.50. 9 x 6 inches.

[Supplements the volumes of the Cambridge Modern History, of which it forms a part. "The general idea of the Atlas is to illustrate, in a series of maps of Europe and of its different countries, as well as of other parts of the world associated with the progress of European History, the course of events by which the Europe of the fifteenth century has been transformed into the Europe of the present day." The maps are predominatingly political: maps illustrating the geographic and economic bases of history are the exception, such as the maps of the density of population and the principal railroads of the United States in 1850 and in 1900 (Nos. 76 and 77; based on the Census atlases) and the economic map of the United States (No. 78). An interesting map is that of the universities of Europe (No. 9) with the dates of founding. The technical reproduction, which, in the representation of relief, is rather weak, was executed by Stanford's Geographical Establishment, London.]